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General introduction

1. General introduction

Introduction

The absolute majority of children behaves bad at times. However, some children show extreme and hence worrisome levels of 'badness'. They lie, they bully, they fight or steal. These children are known to be at risk for developing a persistent pattern of antisocial behavior, delinquency and aggression. There are many risk-factors associated with these types of conduct problems. These include, in addition to individual characteristics, peer, familial and neighborhood factors. In particular, the study of children's *personality traits* may help further our understanding of the development of serious problem behavior in youth. In adulthood and adolescence, a specific constellation of personality traits named 'psychopathy' has proven useful in identifying a particularly recalcitrant form of antisocial and criminal behavior (Cleckley, 1941; Forth, Kosson, & Hare, 2003; Hare, 2003). Recent studies have shown that psychopathic traits can be reliably measured in children age 12 and younger as well, and that they may help to identify unique pathways in the development of antisocial behavior in youth (see Frick & White, 2008; Frick & Dickens, 2006; Johnstone & Cooke, 2004; Kotler & McMahon, 2005; Lynam & Gudonis, 2005 for reviews).

As current research on psychopathic traits at a young age is still limited, insight in the phenomenon is far from complete. Therefore, the present thesis seeks to enhance our understanding of this concept in preadolescent children (age 9–12). First, it investigates a new assessment tool which provides a previously unexplored perspective on psychopathic traits in preadolescent children: that of the child itself. This is important because children are in the unique position to report on feelings, attitudes and behaviors across a range of situations, including the home, the classroom and the playground. Second, it seeks to provide a deeper understanding of the nature of psychopathic traits and their relations to problematic socio-emotional functioning.

Psychopathy

Even though recent years have seen a notable increase in research on psychopathy, particularly in adolescents, the concept is by no means new. First known descriptions date from at least two centuries ago, around 1800. Philippe Pinel, (1745–1826) viewed by many as the father of psychiatry, used the term *insanity without delirium* ('manie sans délire') to describe behavior marked by remorselessness but without loss of reason. However, it was not until Hervey Cleckley's book 'The Mask of Sanity' was published in 1941 that the specific traits of this disorder were first listed (Cleckley, 1941). In his book, Cleckley described 15 male and female patients that he considered prototypical psychopaths. Because these patients showed severely disturbed behaviors, but were free from obvious signs of mental illness such as delusions or irrational thinking, he considered them to wear 'a mask of sanity'. He identi-

fied 16 personality traits that he believed captured the core of the psychopathic personality. Among these were: superficial charm, untruthfulness and insincerity, a lack of remorse and shame, pathological egocentricity and incapacity for love and a failure to follow any life plan. In the '80s and '90s of the twentieth century, it was attempted to operationalize the Cleckley psychopath by developing the Psychopathy Checklist (PCL, Hare, 1980) and its revised version the PCL-R (Hare, 1991, 2003). Currently, this instrument is considered to be the gold standard for assessing psychopathy and it has been the basis of much of what we know about adult psychopathy.

Over 25 years of research on psychopathy in adults, predominantly by means of the PCL-R, has shown it to be a reliable and valid construct, solidly related to concurrent and future socially harmful behaviors (e.g. Douglas, Vincent, & Edens, 2006; Hare, 2003). For example, offenders high in psychopathic traits commit both more and more varied crimes than offenders with low levels of these traits (e.g. Hare, 2003; Kosson, Smith, & Newman, 1990). The crimes they commit are more violent in nature, and they show a particular disposition toward a premeditated, cold-blooded type of violence (Cornell et al., 1996; Porter & Woodworth, 2006).

More recently, the concept of psychopathy was extended downward to adolescents. In this age group, findings have been very similar to adults (e.g. Das, De Ruiter, Lodewijks, & Doreleijers, 2007; Forth et al., 2003; Vitacco, Neumann, Caldwell, Leistico, & Van Rybroek, 2006).

While it is commonly accepted that psychopathy is multi-faceted phenomenon, considerable debate exists as to exactly how many facets (also referred to as dimensions or factors) psychopathy comprises. Some consider antisocial behaviors to be central to construct of psychopathy and call for its inclusion in the assessment of psychopathy (Hare, 1991, 2003). Others have criticized this view on historical, theoretical and empirical (i.e. factor analytic) grounds, and exclude antisocial behavior from the assessment of psychopathy and focus more on the 'clinical', and not necessarily criminal, manifestations of this disorder (Cooke & Michie, 2001; Cooke, Michie, Hart, & Clark, 2004). In other words, they argue that criminality and antisocial behaviors are not a symptom of psychopathy but rather a likely, though not necessary, consequence of the core psychopathic personality traits. They show these personality traits to combine into three dimensions, named an *arrogant and deceitful interpersonal style, a deficient affective experience, and an impulsive and irresponsible behavioral style*. Both views do agree on the fact that psychopathy is a dimensional rather than a categorical construct (Benning, Patrick, Blonigen, Hicks, & Iacono, 2005; Lilienfeld, 1994; McHoskey, Worzel, & Szyarto, 1998; Marcus, John, & Edens, 2004, Edens, Marcus, Lilienfeld, & Poythress, 2006; Edens, Marcus, Lilienfeld, & Poythress, 2006; Guay, Ruscio, Knight, & Hare, Murrie et al., 2007; Neumann & Hare, 2008), meaning that 'psychopaths' with extreme scores on a measure of psychopathy are not qualitatively but quantitatively different from those with milder or low psychopathic

traits. As a consequence of both the personality based perspective as well as the dimensional view, psychopathic traits are not only studied in forensic populations but also within the general population. This type of research allows for a better understanding of psychopathy by separation of the effects of psychopathic personality traits from overt criminality and may also help bring to light protective factors that shield those with high psychopathic traits in the community from an antisocial or criminal development. At the same time, it is also relevant for our understanding of 'full-blown' criminal psychopathy.

Psychopathic traits in children

Historical and developmental considerations

While research on psychopathy has until now foremost focused on adult and adolescent age groups, there are a number of historical and developmental reasons to assume that psychopathic traits may already be observable in preadolescent children. First, historically, the existence of psychopathic-like traits in children has been recognized repeatedly. For example, Cleckley, in *The Mask of Sanity*, acknowledged that psychopathic traits had their roots in early childhood (Cleckley, 1941). A decade later McCord and McCord (1959/1964) recognized the existence of a subgroup of children with conduct problems that also showed psychopathic traits. They highlighted the importance of the early identification of this group. In the 1980s, the third version of the DSM-III (APA, 1980) distinguished between children with conduct disorder (CD) who were either 'socialized' or 'undersocialized', with the latter type showing similarities to the affective and interpersonal characteristics of adult psychopathy. The label 'undersocialized' was chosen rather than psychopathic, as this was considered to be less pejorative. This subtyping was abandoned in the DSM-III-R in favor of a subtyping by level of aggression, as this was easier to operationalize into clear behavioral measures (Connor, 2004; p. 67). Second, developmentally, it has been shown that age appropriate representations of the traits that make up the dimensions of psychopathy can already be observed at a young age (Johnstone & Cooke, 2004). For example, moral emotions relevant to the affective component of psychopathy, such as empathy, guilt and remorse, develop at a young age and individual differences between children can be observed (Hoffman, 2000; Kochanska, 1997; Kochanska & Aksan, 2006; Zahn-Waxler & Radke-Yarrow, 1990; Zahn-Waxler, Radke-Yarrow, Wagner, & Chapman, 1992). Likewise, narcissism, bearing close resemblance to the interpersonal dimension of psychopathy, can be present and is measurable in children (Barry, Frick, & Killian, 2003; Thomaes, Stegge, Olthof, & Bushman, 2008). The same holds for impulsivity (Achenbach et al., 2008; Pelham, Gnagy, Greenslade, & Milich, 1992), which bears resemblance to the behaviorial dimension of psychopathy. To conclude, there are both historical and developmental indications to believe that psychopathic traits may already be present and measurable in children.

Empirical studies on psychopathic traits in children

Several empirical studies on psychopathic traits in young children conducted over the last decade have indeed shown that psychopathic traits can be measured reliably and validly in childhood. In childhood, these traits show notable similarities to those in adults and adolescents in a number of respects: factor structure, stability over time and construct validity. With respect to the factor structure, psychopathic traits in children have been demonstrated to combine into the same three dimensions that comprise psychopathy in older age groups (Cooke & Michie, 2001), an affective one, an interpersonal one and a behavioral one (Dadds, Fraser, Frost, & Hawes, 2005; Fite, Greening, Stoppelbein, & Fabiano, 2009; Frick, Bodin, & Barry, 2000). It should, however, be noted that, like in adulthood, other factor structures have been described as well (Dadds et al., 2005; Frick, O'Brien, Wootton, & McBurnett, 1994). With respect to stability, psychopathic traits have been shown to be quite stable over time. Stability was shown during childhood and from childhood into adolescence over periods ranging from 1 to 9 years (Barry, Barry, & Lochman, 2008; Dadds, Fraser, Frost, & Hawes, 2005; Frick, Kimonis, Dandreaux, & Farell, 2003; Obradovic, Pardini, Long, & Loeber, 2007), although it is yet unclear to what extent children with high psychopathic traits grow up to be adults with high psychopathic traits. With respect to construct validity, as in older age groups, psychopathic traits have shown to be related to antisocial behaviors and aggression both cross-sectionally (Christian, Frick, Hill, & Tyler, 1997; Kimonis, Frick, Fazekas, & Loney, 2006) and prospectively (Dadds et al., 2005; Lynam, 1997; Piatigorsky & Hinshaw, 2004; Kimonis, Frick, Boris, Smyke, Cornell, Farell, & Zeanah, 2006). In addition, a number of affective, cognitive and social deficits found in psychopathic individuals have also been described in children with high levels of these traits, such as low empathy or an impaired reactivity to other people's distress (Blair, 1999; Blair, Colledge, Murray, & Mitchell, 2001; Woodworth & Waschbusch, 2007), low arousal from unpleasant stimuli (Sharp, Van Goozen, & Goodyer, 2006), low levels of anxiety (Frick, Lilienfeld, Ellis, Loney, & Silverthorn, 1999), a reduced responsiveness to punishment when a reward-orientated response was primed (O'Brien & Frick, 1999) and problematic social relationships (Barry, Barry, Deming, & Lochman, 2008; Piatigorsky & Hinshaw, 2004).

To conclude, these findings show that psychopathic traits can indeed be identified early in life. Reliability and validity data show that psychopathic traits in this age group combine into a structure also seen in older samples, that these traits show significant stability over time and that children with elevated levels of these traits demonstrate a number of behavioral, affective, cognitive and social characteristics similar to their older counterparts. Needless to say, however, insight in this phenomenon is incomplete and much is still to be learned.

The present thesis

The present thesis focuses on two topics in child psychopathy that are in need of further study. First, there is a need to extend beyond the currently used methods for assessing psychopathic traits in children. Most or all studies investigating psychopathic traits in this group to date have made use of parent- or teacher report. The use of *self-report* has been shown valid in adolescent and adult psychopathy research (Andershed, Hodgins, & Tengstrom, 2007; Andershed, Kerr, Stattin, & Levander, 2002; Edens, Poythress, & Watkins, 2001; Lilienfeld & Andrews, 1996; Sandoval, Hancock, Poythress, Edens, & Lilienfeld, 2000) and may provide an important additional perspective on preadolescent children's psychopathic traits. Some authors have expressed their concerns about the possible lack of reliability of self-report of psychopathy in preadolescent age groups (Kamphaus & Frick, 1996). However, it has been demonstrated that children from approximately nine years of age are able to report reliably and meaningfully on concepts related to psychopathy such as empathy (Bryant, 1982) and guilt (Ferguson, Stegge, Eyre, Vollmer, & Ashbaker, 2000; Ferguson, Stegge, Miller & Olsen, 1999), narcissism (Barry, Frick, & Killian, 2003; Thomaes, Stegge, Olthof, Bushman, & Denissen, 2008) and hyperactivity-inattention (Muris, Meesters, Eijkelenboom, & Vincken, 2004). Therefore, we hypothesize that preadolescent children can, in fact, be reliable and valid reporters of psychopathic traits. No instruments for measuring psychopathic traits in preadolescent children currently exist. The first aim of the present thesis is, therefore, to develop and validate a self-report instrument for measuring psychopathic traits in preadolescent children.

Second, while the relation between psychopathic traits and overt problematic behaviors like conduct problems and aggression in children has been firmly established, much less is known about how it relates to socio-emotional functioning in this group. Studying socio-emotional processes in children with high psychopathic traits may help to better understand their socially harmful behaviors and may serve as a potentially valuable point of intervention. For example, very little research is available on social relations and social relationship problems in children with high psychopathic traits. However, gaining more knowledge on this topic is important because problematic social adjustment is known to be highly predictive of future psychological maladjustment (Moffitt, 1993, 1996; Parker & Asher, 1987) and antisocial behaviors and aggression (Hoglund, Lalonde, & Leadbeater, 2008; Lochman & Lampron, 1986; Lochman & Wayland, 1994; Lochman, Wayland, & White, 1993; Pardini, Barry, Barth, Lochman, & Wells, 2006). Preliminary evidence suggests that children with psychopathic traits are not well liked by their peers (Barry et al., 2008; Piatigorsky & Hinshaw, 2004) and social relationship problems may aggravate existing psychopathic traits (Barry et al., 2008). With respect to emotional functioning, studies to date have focused on very basic emotional processing such as electrodermal response to distress cues (Blair, 1999), recognition of emotional expression (Blair & Coles, 2000;

Woodworth & Waschbusch, 2007) or emotional reactivity to affective pictures (Sharp, Van Goozen, & Goodyear, 2006). There is, however, a need for research on how these emotional deficits explain problematic behavior (i.e. aggression) observed in children.

The second aim of the current thesis, therefore, is to investigate the relationship between psychopathic traits and socio-emotional functioning in children.

Overview of the studies[1]

Chapter 2 describes the development and validation of the Youth Psychopathic traits Inventory – Child Version (YPI-CV), a 50-item self-report instrument measuring the three core personality dimensions of psychopathy (Cooke & Michie, 2001) in a 9–12 year old community sample. The study describes the internal consistency and test-retest reliability of the instrument, as well as its factor structure and construct validity.

In Chapter 3, the YPI-CV is further investigated in the same sample. The study reports on the concurrent and the 18-month prospective associations between self-reported psychopathic traits and conduct problems and proactive as well as reactive aggression. Furthermore, it examines the stability of these traits and investigates whether high level stability is related to higher levels of follow-up conduct problems and aggression.

The aim of Chapter 4 is, using large community adolescent and child datasets, to develop short versions of the adolescent and child YPI instruments. Such versions can be of use for large data collections in which administration time is valuable and limited.

Chapter 5 investigates the relationship between psychopathic traits, measured through the short version of the YPI-CV (YPI-SCV), and a range of social functioning variables: social emotions, social goals and social status in 9–12 year old children from the community.

Chapter 6 proposes that the relationship between psychopathic traits and aggression in children may be explained by their reduced sensitivity to signs of distress in others. Emotional cues such as fear and sadness function to make a perpetrator aware of the victim's distress and supposedly inhibit aggression (Blair, 1995). As children high in psychopathic traits show a reduced sensitivity to others' distress, the aggression inhibiting function of these emotional cues may be lacking. Using an experimental paradigm the hypothesis is tested that aggression in 9–12 year old children from the community with psychopathic traits can be attenuated by making their opponents' distress cues more salient.

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1. Please note that each study was submitted or published individually. Therefore, some overlap between the introductions and discussions of the studies may occur.

Finally, in Chapter 7, the findings of the five studies are summarized, and their theoretical and practical implications are discussed, along with several topics for future research.

2

Measuring psychopathic traits in children through self-report The development of the Youth Psychopathic traits Inventory – Child Version

Van Baardewijk, Y., Stegge, H., Andershed, H., Thomaes, S., Scholte, E., & Vermeiren, R. (2008). Measuring psychopathic traits in children through self-report. The development of the Youth Psychopathic traits Inventory – Child Version. *The International Journal of Law and Psychiatry. 31*(3), 199–209

2. Measuring psychopathic traits in children through self-report

Abstract

The current article investigates whether self-reports of children provide reliable and valid information concerning psychopathic personality traits and behaviors. For this purpose, we developed a downward extension of an existing adolescent self-report measure; the Youth Psychopathic traits Inventory (YPI; Andershed, Kerr, Stattin, & Levander, 2002), called the Youth Psychopathic traits Inventory – Child Version (YPI-CV). The reliability and validity of the YPI-CV were tested in *n*=360 children from the general population. The YPI-CV had good internal consistency and a three factor structure similar to the original adolescent version. Test-retest reliability over a 6-month period was adequate. In validating the instrument, both self, teacher and peer report were used. The convergent and divergent validity of the three YPI-CV dimensions was examined by relating each of them to an external criterion measures assessing the same construct. It was concluded that psychopathic traits can be measured reliably and meaningfully through self-report in 9 to 12 year olds and that the YPI-CV is potentially a useful instrument for doing so.

Introduction

The concept of psychopathy has proven useful in understanding and predicting frequent and severe adult antisocial behavior. Recent studies have shown that psychopathic traits can be observed in children as well. Existing instruments for assessing psychopathic traits in preadolescent children, however, focus almost uniquely on obtaining third party information, leaving the child's own perspective out of consideration. Therefore, the current study was designed to investigate whether children's self-report could provide valuable information concerning psychopathic personality traits and behaviors. For this purpose, we developed a downward extension of an existing self-report measure of psychopathy. This article represents the initial evaluation of the reliability and validity of this measure.

Psychopathy is widely regarded to be a constellation of three personality dimensions: an *arrogant and deceitful interpersonal style* (e.g., lying, manipulation and glibness or superficial charm); a *deficient affective experience* (e.g., a lack of guilt and remorse, shallow affect and callousness); and an *impulsive and irresponsible* behavior*al style* (e.g., impulsiveness, and excitement seeking) (Andershed, Kerr, & Stattin, 2002; Andershed, Kerr, Stattin, & Levander, 2002; Cooke & Michie, 2001; Cooke, Michie, Hart, & Clark, 2004; Farrington, 2005; Johnstone & Cooke, 2004; Lynam & Gudonis, 2005).

The gold standard in measuring adult psychopathy is unarguably the Psychopathy Checklist-Revised (Hare, 1991, 2003). Because the PCL-R was developed as a forensic assessment instrument, many scientific studies have been conducted in forensic populations, with the aim of understanding and predicting criminal behavior. Several of the diagnostic criteria or items included in the PCL-R involve actual criminal behaviors, in contrast to other items focused on basic psychopathic personality traits. However, criminal and antisocial behavior does not have to be a central or even necessary component of psychopathy itself, but could rather be seen as a secondary behavioral consequence of the personality traits comprising psychopathy (see e.g., Andershed et al., 2002; Cooke et al., 2004). Studying psychopathy solely within forensic samples will therefore only yield information about a subgroup of individuals with psychopathic traits: those that committed crimes, and were arrested for doing so. Some individuals do however comply with the rules set by society despite their high psychopathy scores (or perhaps commit their crimes too skilfully to get caught) (Ishikawa, Raine, Lencz, Bihrle & Lacasse, 2001; Levenson, Kiehl, & Fitzpatrick, 1995; Salekin, Trobst, & Krioukova, 2001). Therefore, to understand the full breadth of the manifestation of psychopathy and to gain insight into the relation between psychopathic traits and maladaptive behavior in society, it is important to also focus on non-forensic samples. A key question here is whether studies on psychopathic personality traits in the general population are also relevant for the understanding of full-blown or clinical psychopathy. Psychopathy is considered by many to be at the extreme end of a normal population trait distribution (Benning, Patrick, Blonigen, Hicks, & Iacono, 2005; Lilienfeld, 1994; McHoskey, Worzel, & Szyarto, 1998) and recent studies show no support for psychopathy as being underpinned by a latent taxon (Edens, Marcus, Lilienfeld, & Poythress, 2006; Guay, Ruscio, Hare, & Knight, 2007), which supports the contention that psychopathy should be seen as a dimensional rather than a categorical construct. In this light, research on psychopathic personality traits in the general population is indeed relevant for our understanding of full-blown psychopathy.

The concept of psychopathy has been extended downwards towards adolescence (for a review see Farrington, 2005; Lynam, & Gunodis, 2005) and over the past decade, researchers have shown interest in psychopathic traits in childhood as well. This is not surprising since offenders with psychopathic personality generally show an earlier onset of dysfunctional behavior compared with other offenders (e.g., Hare, 1991; Johansson, Kerr, & Andershed, 2005; Lynam, 1996). For several reasons, the study of psychopathic traits in children is highly important. Greater knowledge of the presence and expression of psychopathic personality traits at a young age will provide greater understanding of the heterogeneity in the developmental pathways leading to serious conduct problem behavior. Also, it could help us identify and understand early precursors and causes of adult psychopathy. In the future this knowledge

could provide us with early prevention and interventions strategies aimed at decreasing the risk that these children will grow up to be adolescent and adult offenders and/or psychopaths.

The majority of studies focussing on psychopathic traits in children to date suggest that these traits manifest themselves similarly to those in adults (see also Lynam & Gudonis, 2005). Johnstone & Cooke (2004) reviewed literature on developmental psychology and psychopathology and concluded that the manifest variables making up the three core personality dimensions of psychopathy (such as lying, manipulation, shallow affect, (lack of) guilt and impulsivity) can all be observed and measured in children. More specifically, using caretaker and teacher ratings, these manifest variables have been shown to cluster into the three core personality dimensions central to adult psychopathy in children as well (Frick, Bodin, & Barry, 2000). Also, psychopathic traits in children assessed by caretakers and teachers were shown to be related to aggression, delinquency and antisocial behavior (Christian, Frick, Hill, & Tyler, 1997; Frick, Kimonis, Dandreaux, & Farell, 2003; Lynam, 1997). In addition, a number of cognitive and affective deficits found in psychopathic adults, such as an impaired reactivity to other people's distress cues, have been described in children with similar personality traits (teacher report; Blair, 1999; Blair, Colledge, Murray, & Mitchell, 2001).

Recently, several excellent reviews were published that provide detailed descriptions of our current knowledge of psychopathic traits in youth and children (Blair, Peschardt, Budhani, Mitchell, & Pine, 2006; Farrington, 2005; Johnstone & Cooke, 2004; Kotler & McMahon, 2005; Lynam & Gudonis, 2005). These reviews identified some fruitful avenues for future research. One of the recommendations was the development of new instruments for studying and clinically assessing psychopathic traits in children (Johnstone & Cooke, 2004; Farrington, 2005). Currently, two research instruments are available for the use in childhood, both of which were developed as parent/teacher rating instruments: the Anti Social Process Screening Device (APSD; Frick & Hare, 2001) and the Childhood Psychopathy Scale (CPS; Lynam, 1997). The APSD is a 20-item measure of psychopathic traits and antisocial behavior in children modelled after the Psychopathy Checklist-Revised (Hare, 1991). Much of the current knowledge about psychopathic traits in children is derived from research using this instrument. The CPS is a 41-item measure that is also modelled after the PCL-R but comprises items drawn from existing instruments such as the Child Behaviour Checklist (CBCL; Achenbach, 1991). Only two studies to date have used the CPS in a child sample (Lynam, 1997; Lynam et al., 2005) each using a different version of the instrument, so it's applicability for the use in child samples requires additional support.

Both the APSD and the CPS take a third party perspective on psychopathic traits in children, but there is reason to assume that preadolescent children themselves

are capable of rating these traits, through self-report. Young children tend to hold unrealistically positive self-views (Marsh, Craven, & Debus, 1991; Harter, 1990) but this changes towards a more realistic view of the self during development. From approximately 8 years of age, children tend to hold realistic views of themselves and their social and intellectual capacities (Nicholls, 1990). Specifically to psychopathy, it has been demonstrated that children from approximately nine years of age are able to report reliably and meaningfully on emotions such as empathy (Bryant, 1982) and guilt (Ferguson, Stegge, Eyre, Vollmer, & Ashbaker, 2000; Ferguson, Stegge, Miller, & Olsen, 1999) which are closely (inversely) related to the affective component of psychopathy. Also, children of this age have been shown to report reliably and validly on narcissism (Barry, Frick, & Killian, 2003; Thomaes, Stegge, Olthof, & Bushman, 2008) which bears resemblance to the interpersonal component of psychopathy and on hyperactivity-inattention (Muris, Meesters, Eijkelenboom, & Vincken, 2004) which is similar to the behavioral component of psychopathy. Self-report has several benefits. First, a self-report measure can more easily be administered to large samples, which makes it a convenient instrument for research purposes. More important, self-report measures might produce better insight into the core affective traits of psychopathy. Subjective feelings of empathy or guilt (or the lack thereof) for example might be difficult to observe, especially to untrained observers such as parents or teachers (Andershed et al., 2002; Lilienfeld & Andrews, 1996). Second, correlations between scores on measures of psychopathy using different informants have generally been low, possibly indicating that a single (external) source of information is not covering the full manifestation of the construct.

Studies in adults have provided evidence for the usefulness of self-report in psychopathy research. Validation studies have found that self-reported psychopathic traits in adults correlated positively with observer ratings of psychopathy and indices of narcissism, aggression and antisocial behavior (Edens, Poythress, & Watkins, 2001; Lilienfeld & Andrews, 1996; Sandoval, Hancock, Poythress, Edens, & Lilienfeld, 2000). In psychopathy research in adolescents using self-report, similar results were found. Several self-report measures of adolescent psychopathy exist, but most of them are still in experimental phases of development and have only been tested in a very small number of studies and solely in offender samples, see Vaughn & Howard (2005) for a review. Mainly, two measures have been used: the self-report version of the previously mentioned APSD (Frick & Hare, 2001), and the Youth Psychopathic traits Inventory (YPI; Andershed et al., 2002). In both the APSD self-report and the YPI, a three factor structure has been demonstrated (Andershed et al., 2002; Larsson, Andershed, & Lichtenstein, 2006; Vitacco, Rogers, & Neumann, 2003). Also, both measures have shown the ability to identify a more severe and aggressive subgroup of antisocial adolescents (Andershed et al., 2002; Caputo, Frick, & Brodsky, 1999; Dolan & Rennie, 2007, Kruh, Frick, & Clements, 2005; Salekin, Leistico, Neumann,

DiCicco, & Duros, 2004) and the validity of the two measures has been demonstrated in both community, forensic and other institutional settings (e.g., Andershed, Hodgins, & Tengström, 2007; Andershed et al., 2002; Marsee, Silverthorn, & Frick, 2005; Skeem & Cauffman, 2003; Vitacco, Rogers, & Neumann, 2003).

The YPI self-report may, however, carry a number of advantages over the self-report version of the APSD. First, the internal consistencies of the three YPI dimensions have generally been described as good to excellent (Andershed et al., 2002; Larsson, Andershed, & Lichtenstein, 2006; Skeem & Cauffman, 2003) whereas a recent review on the APSD self-report summarized consistently poor internal consistency indices across studies for the Callous-Unemotional dimension (Poythress et al., 2006b). Second, the YPI has multiple (5) items per trait enabling the possibility to be used in research on trait-level. The APSD has only one or two items per trait (Falkenbach, Poythress, & Heide, 2003). Third, the YPI describes feelings and opinions as competences, rather than deficiencies. The psychopathic individual will probably not think of him or herself as lacking feelings of empathy, but rather as having the convenient ability not to care about others. The APSD, in contrast, assesses the traits directly, making it obvious that socially undesirable attitudes are measured, and this is likely to increase response bias (Andershed et al., 2002). For these reasons the YPI may be considered a promising instrument in youths, and the instrument was therefore chosen as a preferable candidate for adapting its content for use in preadolescent children.

In the current study, a number of key characteristics of the newly developed Youth Psychopathic traits Inventory – Child Version were explored. These included the internal consistency of the scale, the test-retest reliability over a period of six months and the underlying factor structure. Three concurrent factor models were specified. The first model comprised the original three factor structure as specified in the original YPI work (Andershed et al., 2002). However, recently Poythress et al. (2006a) reported that the subscale Lying loaded both on the Grandiose-Manipulative dimension and the Impulsive- Irresponsible dimension. The second model to be tested comprised this modification. Alternatively, these authors suggested removing the Lying subscale completely from the YPI-model. The third model to be tested comprised this modification. Finally, we differentially validated the three dimensions of the YPI-CV by comparing each of them with an external criterion measuring the same construct, thus examining the convergent and divergent validity of the dimensions, as was recently suggested by Farrington (2005). If the Callous-Unemotional dimension of the YPI-CV does indeed measure callous and unemotional traits in children one would expect to find a unique relation to a similar construct, i.e. empathy. A lack of empathy is one of the traits that constitute the Callous-Unemotional personality dimension of psychopathy and is considered by some to be the core of psychopathy (Blair, 2005). As for the Grandiose-Manipulative dimension, we expected it to correlate

primarily with narcissism. Grandiosity and selfish and deceitful behavior are central to narcissism (APA, 2000) and to the Grandiose-Manipulative personality dimension of psychopathy. In fact, the corresponding interpersonal dimension in the APSD is named Narcissism (Frick, Bodin, & Barry, 2000). Finally, we validated the Impulsive-Irresponsible dimension with measures of attention-deficit/hyperactivity/impulsivity problems. Because impulsivity, monotony avoidance, and stimulation seeking, traits that are central to the Impulsive-Irresponsible dimension, are also included in the operational criteria for ADHD (APA, 2000; Johnstone & Cooke, 2004) we expected attention-deficit/hyperactivity/impulsivity to be primarily related to this dimension.

Method

Participants

The data were obtained from four medium sized primary schools and were part of a larger study. All schools were located in suburban areas of medium sized cities in the Netherlands. Participants were 360 children (52% boys) ranging in age of 9–12 with an average age of 10.9 (*SD*=.9). Most children (85%) were Caucasian, 15% had other (e.g., Surinam/Lesser Antilles, (North) African) or mixed ethical/cultural origins. This resembles the composition of Dutch society in which approximately 10% of youth is of non-western origin (Statline CBS, 2005).

Procedure

Parental consent was obtained. Consent rate was 95%. Children completed the self-report questionnaires in two one and a half hour sessions during regular school time. It was emphasized that the results would remain confidential and that neither parents nor teachers would be informed of their individual answers. Teachers were instructed and asked to return their questionnaires within 3 weeks, all of which were returned. Schools and teachers were paid €200 for their corporation in gift vouchers.

Measures

Youth Psychopathic trait Inventory – Child Version – The Youth Psychopathic trait Inventory (YPI; Andershed et al., 2002) is 50-item self-report instrument for adolescents measuring the well-established three core personality dimensions of psychopathy, which are described in the introduction. The Grandiose-Manipulative Dimension is composed of four subscales: Dishonest Charm, Lying, Grandiosity, and Manipulation; the Callous-Unemotional Dimension is composed of three subscales: Callousness, Unemotionality and Remorselessness and the Impulsive-Irresponsible Dimension is composed of three subscales: Impulsiveness, Irresponsibility, and Thrill-seeking. The YPI intends to measure personality traits and does not contain reference to antisocial behavior. Items are scored on 4-point scale (*1=does not apply at all – 4=applies very well*).

A child version of this instrument was created for use in 9 to 12 year olds. It was decided to keep the structure of the instrument intact, with ten subscales of five items each. Our aim was to create an age-appropriate version of the instrument that matched the cognitive, emotional and verbal development and social realities of 9 to 12 year olds. Both the Dutch authorized translation (Das & De Ruiter, 2002) of the adolescent YPI and original English adolescent YPI (Andershed et al., 2002) were used as a reference in developing the child version. Most changes were minor and many involved the comprehensibility of the items. We used simplified wording and/or shortened the length of the item. For example: "To be nervous and worried is a sign of weakness" was changed to: "Being nervous and worried means you're weak". Some changes were specific to the Dutch language. Sample items of the YPI-CV are presented in table 1.

A pilot study[2] was conducted in n=224 unreferred children to assess the basic psychometric characteristics and the validity of the newly developed measure. Principal components analysis revealed a three factor structure identical to the original YPI. In addition, a correlation with the teacher report APSD (Frick & Hare, 2001) of r=.44 (p<.01), a correlation with self reported problem behavior (SDQ; Goodman, 1997) of r=.45 (p<.01) and a correlation of r=.34 (p<.01) with a measure of teacher reported problem behavior (DBD; Pelham, Gnagy, Greenslade, & Milich, 1992; Dutch version: Oosterlaan, Scheres, Antrop, Toeyers, & Sergeant, 2000) was found. Finally,

Table 1. Sample items of the YPI – Child Version[1]

Dimension	Subscale	Sample item
Grandiose-Manipulative	Dishonest Charm	Often I act extra nice and sweet to get what I want, even with people I don't like.
	Grandiosity	I will become a well-known and important person, I know that already
	Lying	I like to exaggerate when I tell about something.
	Manipulation	Fooling others is the best way to get what I want from them.
Callous-Unemotional	Remorselessness	Feeling bad when you have done something wrong is a waste of time.
	Unemotionality	It's weak to feel nervous or worried.
	Callousness	When others are sad, I don't really care.
Impulsive-Irresponsible	Thrillseeking	I like to do things just because they feel cool or exciting.
	Impulsiveness	It often happens that I do things without thinking ahead.
	Irresponsibility	I don't think it is necessary to tell my parents what I'm going to do when I go outside.

1 All 50 items are included in the appendix.

2. Due to space limitations, the pilot data are not reported here, but available from the first author.

scores were stable over a 2-month period (total score *ICC*=.77). These findings gave sufficient reason to further test the YPI-CV, which is reported in the current study.

Empathy Continuum – Situational empathy was assessed using an adaptation of the Dutch version of the Empathy Continuum (EC; Strayer, 1993; Dutch version: De Wied, Goudena, & Matthys, 2005), a system for measuring an individual's affective-cognitive response to emotional evocative stimuli. Six stimulus videoclip vignettes were used to induce children's empathic responses. Five vignettes were clips from Dutch documentary or commercial films featuring children of approximately the same age as the participants showing facial and verbal emotional reactions. The sixth vignette featured a little bear having just lost its mother. In three vignettes, sadness was portrayed, in two happiness and in one clip the prominent emotion could be identified both as anger and as sadness. The clips were presented in random order on a television set in front of the classroom. Before each clip, a brief introduction was read by the experimenter explaining the circumstances of the clip the participants were about to see. Children read along in their own copies of the text. After each vignette was viewed, participants scored the quality and intensity of the emotion of the protagonist by circling one or more of four cartoon-like pictures of a child experiencing either happiness, anger, fear or sadness. A neutral (no-emotion) picture was also provided. The intensity was scored on a 5-point rating scale. Participants rated the quality and intensity of the emotion they themselves experienced while watching the protagonist expressing his or her emotion in the same way. In addition, they were asked to write down the reason why they themselves experienced the reported emotion.

The EC scoring system by Strayer (1993) was used. Concordant affect with the protagonist is scored on four levels of affect match (*no emotion – similar emotion – same emotion – same emotion with similar intensity*). In addition seven levels of cognitive emotional attribution are scored ranging from *irrelevant* (e.g., "I didn't like it") to *explicit perspective-taking* (e.g., "I'd be sad too, in her place, when one gets bullied"). The scores range from 0 to 19 indicating the joint operation of affective and cognitive empathy. Higher scores indicate more empathy. Reliability and validity was reported to be satisfactory in unreferred children (5–13 years old; Strayer, 1993) using the interview version and clinically referred children (8–12 years old; Wied, Goudena, & Matthys, 2005) using a self-report adaptation. In this study, the self-report measure was used (Cronbach's alpha was .65).

Self-reported empathy: Index of Empathy for Children and Adolescents – An abbreviated 10-item version of the Index of Empathy for Children and Adolescents (Bryant, 1982) was used as a measure of dispositional empathy. Sample item: "It makes me sad to see a girl who can't find anyone to play with" to which children respond with *yes* or *no*. The internal consistency of the original measure has been established in

other work (Bryant, 1982). In the current study, the alpha of the abbreviated version was .78.

Peer-nominated empathy: Best-friend-rated empathy procedure – Items for the peer-nomination measure of empathy were taken from the best-friend-rated empathy procedure (Strayer & Roberts, 2004; Dutch version: Thomaes et al., 2008). Children nominated up to three classmates who best fit items describing empathic behavior. We chose a peer-rating measure because school-aged children spend a great deal of direct interaction with their classmates, offering an important and unique perspective on children's functioning (Weiss, Harris, & Catron, 2002). Sample item: "These kids feel bad if they see another kid without a friend to play with". Cronbach's alpha was .88.

Self-reported narcissism: Childhood Narcissism Scale – Narcissism was assessed using the Childhood Narcissism Scale (CNS, Thomaes et al., 2008). The CNS is a short, one dimensional self-report measure that taps a comprehensive range of characteristics central to narcissism. Many items of the CNS reflect the dynamics between a grandiose or entitled self versus inferior or undeserving others. The measure is designed for use in the general population. Items are positively worded so children do not feel they are rating negative or socially undesirable traits. Sample items: "Kids like me deserve something extra" and "It often happens that other kids get the compliments I actually deserve". Children respond on a 4-point scale ranging from 0 (*not at all true*) to 3 (*completely true*). The validation article reported the measure to be reliable and valid. Cronbach's alphas ranged from .78 to .87 (Thomaes et al., 2008).

Teacher reported attention-deficit/hyperactivity problems: Problem Behavior at School Interview – ADHD scale – Attention-deficit and hyperactivity problems were assessed using the ADHD scale from the Problem Behavior at School Interview (PBSI, Erasmus MC, 2000) a 32-item interview assessing problematic behavior in children. In the current study a paper and pencil version was used. Teachers rated each child's behavior on a 5-point scale. The ADHD symptoms scale comprises eight items, including "This child is impulsive". Cronbach's alpha of the paper and pencil version in this study was .92.

PMIEB peer-rated Hyperactivity/Impulsivity/Inattention – Peer-rated Hyperactivity/impulsivity/inattention was assessed using the Peer-report Measure of Internalizing and Externalizing Behavior (PMIEB; Weiss et al., 2002), a well established peer-nomination inventory that assesses psychopathology in school-aged children. Participants are asked to select up to three of their classmates who best fit the description of Hyperactivity/impulsivity/inattention type behavior. For example: "These children have

trouble doing their classwork when there are a lot of other things going on in the class". The PMIEB validation article reported a Cronbach's alpha of .89 for this scale (Weiss et al., 2002).

Results

Table 2 presents the internal consistencies of the YPI-CV total score, dimension scores and subscale scores for the full sample.

All CITC's and MIC's were above the conventionally recommended values of .30 (Nunnally & Bernstein, 1994) and .15 (Clark and Watson, 1995) respectively. An alpha coefficient above .70 is generally considered acceptable. Compared to this criterion, reliabilities of total scores and dimension scores were good. All three of the subscales comprising the Callous-Unemotional dimension (Remorselessness, Unemotionality and Callousness) had somewhat lower reliability than what is commonly recommended. This matches findings in earlier studies by Skeem & Cauffman (2003) and Poythress et al. (2006a) who have reported similar Cronbach's alphas for subscales comprising the Callous-Unemotional dimension of the adolescent YPI.

Table 3 presents the average scores and standard deviations for boys and girls. Boys scored significantly higher on all subscales except for the Impulsiveness subscale. Total score and dimension scores all were significantly higher for boys than for girls.

Test-retest reliability – Test-retest reliability was tested in a randomly selected sub sample of 120 children (52% boys) over a 6-month period. Average age was *M*=10.85,

Table 2. Descriptives and internal consistency of the YPI – Child Version (n=360)

Dimension/subscale	Number of items	Alpha	MIC	CITC
YPI-CV Grandiose – Manipulative	20	.89	.29	.51
Dishonest Charm	5	.77	.42	.55
Grandiosity	5	.78	.43	.50
Lying	5	.73	.37	.50
Manipulation	5	.72	.33	.48
YPI-CV Callous – Unemotional	15	.80	.22	.42
Callousness	5	.55	.23	.35
Unemotionality	5	.58	.23	.35
Remorselessness	5	.61	.24	.37
YPI-CV Impulsive – Irresponsible	15	.85	.27	.47
Impulsiveness	5	.66	.29	.43
Irresponsibility	5	.71	.32	.47
Thrill-seeking	5	.73	.35	.49
YPI-CV total score	50	.92	.20	.43

Note: MIC=mean inter-item correlation; CITC=corrected item-to-total correlation.

Table 3. Mean scores, standard deviations of the YPI – Child Version total score, dimension scores and subscale scores for boys and girls

Dimension/subscale	*M*	*SD*	Range	*M*	*SD*	Range	*t*-value
	Boys (*n*=180)			Girls (*n*=160)			
YPI-CV Grandiose-Manipulative	1.52	.42	1.00–2.95	1.34	.37	1.00–3.40	4.12***
Dishonest Charm	1.59	.57	1.00–4.00	1.39	.51	1.00–4.00	3.42**
Grandiosity	1.48	.60	1.00–4.00	1.28	.44	1.00–4.00	3.37**
Lying	1.57	.56	1.00–3.60	1.42	.52	1.00–3.20	2.57**
Manipulation	1.43	.47	1.00–3.40	1.28	.38	1.00–3.40	3.32**
YPI-CV Callous-Unemotional	1.73	.42	1.07–3.40	1.42	.35	1.00–3.47	7.43***
Callousness	1.73	.50	1.00–3.40	1.32	.37	1.00–3.40	8.35***
Unemotionality	1.95	.54	1.00–3.60	1.58	.46	1.00–3.40	6.68***
Remorselessness	1.52	.54	1.00–3.60	1.35	.41	1.00–3.60	3.33**
YPI-CV Impulsive-Irresponsible	2.05	.55	1.00–3.67	1.83	.50	1.00–3.60	4.00***
Impulsiveness	1.99	.58	1.00–4.00	1.89	.53	1.00–3.40	1.63 n.s.
Irresponsibility	1.72	.65	1.00–4.00	1.55	.59	1.00–3.50	2.58*
Thrill-seeking	2.44	.75	1.00–4.00	2.05	.63	1.00–4.00	5.03***
YPI-CV total score	1.74	.38	1.02–2.94	1.51	.35	1.02–3.40	5.74***

Note: * $p<.05$ ** $p<.01$ *** $p<.00$

SD=.84. The 6-month intraclass correlation coefficient was .76 for the total score. The ICC for the Grandiose-Manipulative dimension was .75, for the Callous-Unemotional dimension .61 and for the Impulsive-Irresponsible dimension .72.

Factor analyses – Confirmatory factor analysis was performed to examine the fit of the YPI factor model, with EQS as the computational program. To correct for possible deviations from multivariate normality the Robust Maximum Likelihood Estimation method was used (Bentler, 1995; Byrne, 2006). A widely used method to determine the model fit is the χ^2-test. In general it is assumed that significant χ^2-values represent poor fits. The value of the χ^2-'goodness of fit'-test is, however, strongly determined by the number of cases in the sample, with large numbers of cases inflating the χ^2. In this case it is recommend to use fit-indices that are less dependent of the sample size: the normed fit index (NFI) and the comparative fit-index (CFI) (Bentler, 1995). Both the NFI and the CFI range from zero to one. Models with a fit of .95 and above are usually considered to represent the observed covariance matrix satisfactorily (Loehlin, 2004). In addition to these fit indices, the Root Mean Square Error of Approximation can be calculated. The RMSEA reflects the lack of fit of a model. Smaller values thus represent a better fit. Models with values of 0.08 or smaller are usually considered to represent the data well, wheres values of 0.05 or smaller represent a good model fit (Loehlin, 2004). Finally, Akaike's Information Criterion (AIC) can be calculated. This criterion takes into account both the statistical goodness of fit and

the number of parameters that have to be estimated to achieve that degree of fit. The model that produces the minimum value may be considered the most useful (Dunn, Everitt, & Pickles, 1993). In table 4 the results of the confirmatory factor analysis are presented, using the above mentioned fit indices.

Table 4 shows that the first model fitted the data the least well, just failing to meet the minimum requirements of model fit as set out above. The second model gives a better representation of the data. Removing the subscale Lying as was done in the third model presents the data best, producing the highest NFI/CFI and the smallest

Table 4. Results of testing of three models of the YPI – Child Version using Confirmatory Factor Analysis in the full sample (n=360)

Dimension/subscale	Model 1 (Andershed et al., 2002)		Model 2 (model 1 revised by Poythress et al., 2006)[1]		Model 3 (final model Poythress et al., 2006)[2]	
	Standardized Load	Error	Standardized Load	Error	Standardized Load	Error
Grandiose-Manipulative (GM)						
Dishonest charm	0.80	0.60	0.82	0.58	0.83	0.56
Grandiosity	0.59	0.81	0.61	0.71	0.63	0.78
Manipulation	0.82	0.57	0.83	0.55	0.81	0.59
Lying	0.67	0.74	0.28/0.48[3]	0.71	-	-
Impulsive-Irresponsive (II)						
Thrill-seeking	0.83	0.55	0.83	0.56	0.83	0.55
Impulsivity	0.66	0.75	0.68	0.74	0.66	0.75
Irresponsibility	0.75	0.66	0.76	0.65	0.75	0.66
Callous-Unemotional (CA)						
Remorselessness	0.66	0.75	0.66	0.75	0.67	0.75
Unemotional	0.76	0.65	0.76	0.65	0.76	0.65
Callousness	0.81	0.59	0.81	0.59	0.81	0.59
Correlations between factors						
GM with II	0.76		0.70		0.70	
GM with CA	0.63		0.62		0.64	
II with CA	0.70		0.67		0.70	
Model fit statistics						
Satorra-Bentler χ^2	χ^2= 103 (32); n=367; p<0.0001		χ^2= 80 (31); n=367; p<0.0001		χ^2= 52 (24); n=367; p=0.0006	
NFI	0.87		0.90		0.92	
CFI	0.91		0.94		0.96	
RMSEA	0.08		0.07		0.06	
AIC	39.8		18.4		4.9	

[1] The revised model allows Lying subscale to load on the Impulsive-Irresponsive factor

[2] In this model the Lying subscale is removed

[3] The second figure represents the standardized load on the Impulsive-Irresponsive factor

RMSEA and AIC, suggesting that this model has the best fit to the data. To test the robustness of these findings the models were also tested across the gender groups. Largely the same pattern emerged. For boys the third model fitted best, as in the total sample (model 1: CFI=.93, RMSEA=.08, AIC=2.6; model 2: CFI=.94, RMSEA=.07, AIC=−2.6; model 3: CFI=.97, RMSEA=.05, AIC=−11.2). For girls, the third model also had a good fit, but the second model fitted best (model 1: CFI=.81, RMSEA=.08, AIC=3.0; model 2: CFI=.95, RMSEA=.04, AIC=−21.3; model 3: CFI=.92, RMSEA=.06, AIC=−11.7).

Our findings thus give support to the final modified three factor YPI-model with the Lying subscale removed from the Grandiose-Manipulative dimension as proposed by Poythress et al. (2006a). This model has the best overall fit and prevents ambiguities in interpretation of a model with cross-loading subscales.

Validity of the YPI-CV dimensions – Table 5 displays zero-order correlations between the YPI-CV total score, the three dimensions (Grandiose-Manipulative, Callous-Unemotional and Impulsive-Irresponsible) and their individual criterion measures Narcissism, Empathy and Attention-deficit/Hyperactivity/Impulsivity problems, respectively. The semi-partial correlations in the table display the unique association between each YPI-CV dimension and the criterion measures, controlled for the other two YPI-CV dimensions. As expected, we found that all three personality dimensions comprising psychopathy were predominantly related to their respective criterion measures.

As table 5 shows, Callous-Unemotional traits were negatively related to situational empathy, measured by empathetic reactions to video vignettes (EC), whereas the other dimensions were not. When dividing the videos into the ones convening sadness (e.g., a crying girl explains how she's bullied and ignored by her classmates on a daily basis) and happiness (e.g., a boy expresses joy after having won a tennis tournament) the sad videos turned out to be the ones the Callous-Unemotional dimension was most strongly negatively related to. None of the psychopathy dimensions were related to the happy videos. Self-reported trait empathy (Bryant's Empathy Index) was significantly negatively related to the Callous-Unemotional dimension but not to both other dimensions. An identical pattern was found for empathic traits reported by classmates (peer-nominated empathy). No significant gender differences were found (using Fisher Z-transformation).

Both the total score and the individual dimensions of the YPI-CV were strongly positively related to self-reported Narcissism (CNS). The highest correlation was found between self-reported narcissism and the corresponding Grandiose-Manipulative dimension. Semi-partial correlations indicated that the Grandiose-Manipulative and the Callous-Unemotional dimensions were positively associated with self-reported narcissism, with the relation between Grandiose-Manipulative being the strongest.

Table 5. Validity of the three individual YPI – Child Version dimensions

Criterion construct	Criterion measure	YPI-CV Grandiose – Manipulative		YPI-CV Callous – Unemotional		YPI-CV Impulsive – Irresponsible		YPI-CV total score
		Zero-order correlation	Semi-partial correlation	Zero-order correlation	Semi-partial correlation	Zero-order correlation	Semi-partial correlation	Zero-order correlation
Narcissism	Childhood Narcissism Scale (*n*=338)	**.51****	**.35*****	.38**	.14**	.31**	–.07	.48**
Empathy	EC total score (*n*=343)	–.06	–.02	**–.13***	**–.12***	–.03	–.05	–.08
	EC sad (*n*=343)	–.11	–.03	**–.19****	**–.16****	–.06	–.06	–.13*
	EC happy (*n*=343)	–.00	.01	–.02	–.03	–.01	.03	–.01
	Bryant's Empathy Index (*n*=338)	–.05	.09	**–.26***	**–.26*****	–.10	.00	–.15*
	Peer-nominated empathy (*n*=345)	–.12*	.04	**–.27****	**–.26****	–.13*	.02	–.20*
Impulsivity/hyperactivity/ inattention	Teacher-rated PBSI ADHD scale (*n*=338)	.16**	.03	.21**	.08	**.26****	**.18****	.25**
	Peer-nominated Hyperactivity/ inattention (PMIEB) (*n*=345)	.19**	.01	.18**	.02	**.28****	**.18*****	.26*

Note: EC=Empathy Continuum (Strayer, 1993), number of clips: EC Sad=3, EC Happy=2. PBSI=Problem Behavior at School Interview (Erasmus MC, 2000). PMIEB= Peer-report Measure of Internalizing and Externalizing Behavior (PMIEB; Weiss et al., 2002) * $p<.05$ ** $p<.01$ *** $p<.00$

No relation between the Impulsive-Irresponsible dimension and self-reported narcissism was found when the other two dimensions were controlled for. No significant gender differences were found.

Two measures of Attention-deficit/Hyperactivity/Impulsivity problems were used. Both the teacher-report (PBSI) and the peer-report measures of Attention-deficit/Hyperactivity/Impulsivity problems (PMIEB) were significantly positively correlated to all psychopathy dimensions. As expected the correlations between both measures of Attention-deficit/Hyperactivity/Impulsivity and the corresponding Impulsive-Irresponsible dimension were the strongest. Semi-partial correlations showed that only the Impulsive-Irresponsible dimension was uniquely associated with measures of Attention-deficit/Hyperactivity/Impulsivity problems. No significant gender differences were found.

Discussion

The current article described the initial evaluation of the Youth Psychopathic traits Inventory – Child Version (YPI-CV), a self-report instrument of psychopathic traits in children. The endeavor of developing a valid measure of psychopathic traits for children is important because gaining knowledge about the early development, manifestations, and etiology of these traits are early but necessary steps towards the development of effective interventions.

Overall, the results were promising. Good to excellent internal consistencies were found for the YPI-CV total score and the three dimension scores. Boys scored higher on psychopathic traits than did girls, which is in line with previous research using the YPI (Andershed et al., 2002), and with the general finding that adult psychopathic traits are more prevalent in men than they are in women (Hare, 1991, 2003). Scores on the YPI-CV were stable over a 6-month period. This held for the total score and all three dimensions, though the ICC was somewhat lower for the Callous-Unemotional dimension. These stability scores match earlier findings using the YPI in adolescents over a period of 1 month (ICC=.65–.79; Skeem & Cauffman, 2003) and findings using the mother reported CPS (Lynam, 1997) over a period of 6 months in adolescents (total score ICC=.74; Lynam & Gudonis, 2005). Stability scores reported over a period of 2–4 years using the parent reported APSD were somewhat higher (ICC=.72–.88; Frick et al., 2003) but it should however be noted that these stability coefficients may be inflated as this study selected children based on their extreme scores on the dimensions of the APSD (Lynam & Gudonis, 2005).

Factor analyses showed that a comprehensive three factor structure fit the data quite well and removing the Lying subscale from the model resulted in the best fit. This result is in line with results in a juvenile justice involved sample (Poythress et al., 2006a) although it differs somewhat from adolescent community samples (Andershed et al., 2002; Larsson, Andershed, & Lichtenstein, 2006). The pattern was very

similar for boys and for girls, which was also the case for the relationship with external validation criteria. No significant gender differences were found when comparing the YPI-CV dimensions individually to instruments measuring similar constructs. This finding supports the notion by Andershed and colleagues (2002) that the YPI seems to work equally well for boys and girls. Both the Grandiose-Manipulative dimension and the Impulsive-Irresponsible dimension showed to be uniquely related in the expected direction to their counterpart (narcissism and Attention-deficit/Hyperactivity/Impulsivity problems, respectively), after controlling for the other psychopathy dimensions. The Callous-Unemotional dimension was both inversely related to the two measures of empathy but also to self-reported narcissism after controlling for the other psychopathy dimensions. These findings support the construct validity of the YPI – Child Version, but do also show that there is substantial overlap between the three dimensions, especially between Callous-Unemotional traits and Grandiose-Manipulative traits. This finding is not surprising given the fact that a two factor structure of psychopathy, in which these two concepts form one factor, has often been reported, both in children and adults. The finding that Callous-Unemotional traits were negatively related to empathic reactions to sadness but not to happiness fits research showing that children and adults with high psychopathic traits are insensitive specifically to signs of distress in others, but not to other emotions (Blair & Coles, 2000; Blair, Morris, Frith, Perrett, & Dolan, 1999; Stevens, Charman, & Blair, 2001)

Overall, the results suggest that psychopathic traits can be measured reliably and meaningfully through self-report in 9 to 12 year old children from the general population and that the Youth Psychopathic traits Inventory – Child Version (YPI-CV) is a promising instrument for doing so. With only relatively minor modifications to the original instrument, results similar to those in adolescents were found (Andershed et al., 2002). These findings support the growing notion that psychopathic traits manifest and relate similarly across ages. To our knowledge, the study presented in this article is the first to focus exclusively on assessing psychopathic traits in children from the community through self-report. The few studies to date on this topic have been hampered by mixed samples, in which children and adolescents, and community and clinical samples were combined (Marsee, Silverthorn, & Frick, 2005; Vasey, Kotov, Frick, & Loney, 2005).

One of the major caveats in current psychopathy literature is the lack of knowledge of the stability of psychopathic traits across the lifespan. No studies have been conducted that test to what extent children who display high levels of psychopathic traits do grow up to be psychopathic adults. The YPI and YPI-CV could prove to be serviceable instruments for this type of longitudinal research because almost identical questionnaires are now available for children and adolescents. Longitudinal studies using the YPI could even reach into adulthood as there is some support for the applicability of the YPI to adults (Kansi, 2003). The use of a self-report measure avoids

problems related to external rater variance that are likely to complicate research, which occurs because teachers change over time, or because parents themselves develop and transform over time as well. It is important that this type of longitudinal research takes place not only in high risk or forensic samples but also in the community because there it would be possible to study risk- and protective factors behind the traits as well as the "normal" development of the traits over time.

The present results should be viewed in the light of a number of limitations. First, because of the cross-sectional nature of our data, the predictive utility of the YPI-CV has yet to be established. Second, the current study supports the validity of the YPI-CV solely as a research instrument. No conclusion can be drawn about the use of the YPI-CV as a clinical assessment instrument. Third, analogous to the validation article of the original adolescent YPI (Andershed et al., 2002) factor analysis was done on the subscales rather than on the individual items. Therefore, the relationship with the items has gone out of sight in both our study and the original adolescent study. Future studies should look deeper into the relationship between items, dimensions and the latent trait of psychopathy in both children and adolescents. A first step to be taken in future research, however, is the cross-cultural validation of the YPI-CV. The instrument has currently been tested in Dutch children only. Additionally, the reliability and validity of the YPI-CV need to be tested in clinical or high risk samples, as the adolescent version of the instrument has proven reliable and valid in both community and adjudicated samples (Andershed et al., 2002; Dolan & Rennie, 2006; Dolan & Rennie, 2007; Larsson, Andershed, & Lichtenstein, 2006; Poythress et al., 2006a; Skeem & Cauffman, 2003). Another important topic in a future evaluation study of the YPI-CV is to test whether the subscale Lying should be included in the Grandiose/Manipulative dimension or not. Both the current article and a previous study in adolescents (Poythress et al., 2006a) suggest that the three factor model of the YPI has a better fit without this subscale. Secondary support for these findings is provided by factor analyses of the APSD in which the one item assessing Lying ("Lies easily and skilfully") has remained unclassified in both the two and three factor structure of the measure (Frick & Hare, 1994; Frick, Bodin, & Barry, 2000). Research on the adult psychopathy construct however, clearly suggest that lying is part of the construct (Cooke & Michie, 2001), at least in adults. Therefore, it is preliminary to subtract the Lying subscale from the YPI model. An important strength of the current study is that the YPI-CV was validated using multiple informants: self, teachers and peers. None of these however provide objective criterion measures. Therefore, future research could validate the YPI-CV using measures that are independent of rater characteristics, such as physiological measures and experimental paradigms that assess responsiveness to emotional stimuli (Rutter, 2005).

Gaining a fuller understanding of the development of psychopathic personality disorder is an important endeavor that can have major implications for society. People

who develop this socially devastating personality syndrome cause substantial harm to society, both economically through legal processes, institutionalizations, and treatments as well as humanistically through their harm to their family members, children, and the victims of their crimes. Early prevention of this disorder should thus receive high priority. Effective early preventive interventions need to be built on research, which up to date is sparse on children. A basic but essential starting point for this line of research is the development of valid and reliable measures of psychopathic traits in children, and the present research shows the YPI-CV to be one of those.

3

Self-reported psychopathic traits in children
Their stability and concurrent and prospective association with conduct problems and aggression

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3. Self-reported psychopathic traits in children

Abstract

The current study investigated the 18-month stability of self-reported psychopathic traits measured through the Youth Psychopathic traits Inventory – Child Version (YPI-CV) and their concurrent and prospective associations with conduct problems and aggression in a sample of 9–12 year olds (*n*=159, 52% boys) from the community. Self-reported psychopathy scores were moderately to highly stable and traits were positively related to conduct problems both concurrently and at follow-up, the latter even after controlling for initial levels of conduct problems. Higher self-reported psychopathic traits were also related to higher reactive, but particularly proactive aggression at follow-up. Finally, children with persistently high levels of psychopathic traits exhibited higher levels of conduct problems and proactive aggression at follow-up than those with unstable or stable low psychopathic traits.

Introduction

Psychopathy stands for a constellation of personality traits such as callousness, manipulativeness, egocentricity, impulsivity and a need for stimulation (e.g. Cleckley, 1988; Hare, 2003). This spectrum of characteristics can be classified in three dimensions: affective callous-unemotional, interpersonal grandiose-manipulative and impulsive and irresponsible traits (Cooke & Michie, 2001). Psychopathy is a well documented predictor of violence and criminality among adults (Douglas, Vincent, & Edens, 2006; Hare, 2003) and it is therefore not surprising that an increasing number of studies focuses on psychopathic traits in younger age groups. The majority of these studies have pertained to adolescent populations, but a number of studies has also tested the psychopathy concept in preadolescent children. Generally, these studies suggest that psychopathic traits can indeed be measured reliably and validly in childhood. At a young age, these traits show notable similarities to those in adults in a number of key respects: factor structure, stability over time and relation to criterion variables.

With respect to the factor structure, psychopathic traits in children have been demonstrated to combine into the same three dimensions that comprise adult psychopathy (Frick, Bodin, & Barry, 2000; Van Baardewijk, Stegge, Andershed, Thomaes, Scholte, & Vermeiren, 2008). Although, like in adulthood (e.g. Hare, 1991; 2003), other factor structures have also been described (Dadds, Fraser, Frost, & Hawes, 2005; Frick, O'Brien, Wootton, & McBurnett, 1994), and there has been some discussion about the relative value of each of the dimensions (e.g. the callous-unemotional traits as the most defining characteristics, see Frick & White (2008) for a review).

With respect to stability, if the concept of child psychopathy is to be viable, it should demonstrate significant stability over time both during childhood and into

adolescence (Seagrave & Grisso, 2002). Indeed, both at mean and rank order level, psychopathic traits have shown moderate to high stability across childhood and into adolescence in various samples, over periods ranging from 1 to 9 years (Barry, Barry, Deming, & Lochman, 2008; Dadds et al., 2005; Frick, Kimonis, Dandreaux, & Farell, 2003; Obradović, Pardini, Long, & Loeber, 2007). Interestingly, recent studies looking at individual level stability, have demonstrated that higher stability of psychopathic traits in youth was predictive of worse outcome (i.e. higher levels of antisocial personality characteristics in young adulthoods; Pardini & Loeber, 2008) and worse outcome of a parent-training intervention in young boys (Hawes & Dadds, 2007), which suggests that it is worthwhile to focus on the predictive utility of differences in the stability of psychopathic traits.

Finally, if psychopathy is a viable construct in children, one would expect to find relations to criterion variables analogous to those in adults. In adults, psychopathy is strongly related to antisocial behaviors and aggression. Offenders with high psychopathic traits commit both more, and more varied, crimes than offenders with low levels of these traits (e.g. Hare, 2003; Kosson, Smith, & Newman, 1990) and the crimes they commit are more violent in nature (e.g. Hemphill, Hare, & Wong, 1998; Porter, Birt, & Boer, 2001; Serin & Amos, 1995). While aggression in offenders with low psychopathic traits can generally be characterized as a hostile, emotional and impulsive reaction in response to a perceived threat (reactive violence or aggression; Dodge & Coie, 1987) psychopathic offenders show a particular disposition toward premeditated, 'cold blooded' and goal directed violence (proactive violence; Dodge & Coie, 1987) in addition to their elevated levels of reactive aggression (Porter & Woodworth, 2006). This tendency towards instrumental violence may be explained by their low levels of autonomic arousal, emotional attachment and empathy (Meloy, 2006). As expected, similar findings with respect to externalizing behaviors have been described in children. Psychopathic traits have shown to be useful in designating an important subgroup within the heterogeneous group of preadolescent children showing behavioral problems. The presence of these traits is associated with more severe antisocial behaviors and delinquency, both concurrently and predictively over follow-up periods ranging from 1 to 7 years (Christian, Frick, Hill, & Tyler, 1997; Dadds et al., 2005; Frick, Cornell, Barry, Bodin, & Dane, 2003; Kimonis, Frick, Fazekas, & Loney, 2006; Lynam, 1997; Piatigorsky & Hinshaw, 2004). Furthermore, children with high psychopathic traits show higher levels of reactive aggression but, like in adults, particularly of proactive or instrumental aggression than children with behavioral problems without psychopathic traits (Frick, et al., 2003a; Waschbusch & Willoughby, 2008).

To conclude, findings with respect to the factor structure of psychopathy, the stability and the concurrent and prospective relationships to externalizing behaviors suggest that the concept is viable, not only in adults and adolescents, but in preadolescent youth as well. (For reviews, which also cover similarities pertaining to

emotional and cognitive functioning, see Frick & Dickens, 2006; Frick & White, 2008; Kotler & McMahon, 2005; Lynam & Gudonis, 2005).

A recent development in the discussion concerning psychopathic traits in children pertains to the use of informants. All cited studies investigating psychopathic traits in children have relied on parent and/or teacher report, with the majority of those using versions of the Anti-social Process Screening Device (APSD; Frick & Hare, 2001). However, correlations between scores on measures of psychopathy using various informants have generally been low, possibly indicating that a single (external) source of information is not covering the full manifestation of the construct. In fact, for a number of reasons, the use of an internal source (i.e. self-report) may provide an important perspective on children's psychopathic traits in addition to external, third party reports. First, in general, children are in the unique position to report on behaviors across a range of situations, including the home, the classroom and the playground. Second, specifically to psychopathy, internal emotional states central to the psychopathic constellation, such as the lack of empathy or guilt, may be more evident to children themselves than to untrained observers such as parents or teachers (Andershed, Kerr, Stattin, & Levander, 2002; Lilienfeld, & Andrews, 1996; Muñoz & Frick, 2007). Third, the use of self-report minimizes the contamination between core psychopathic personality traits and their, more conspicuous but secondary, antisocial behavioral consequences. There is reason to assume that preadolescent children themselves are indeed capable of rating these traits through self-report as children from approximately nine years of age have been shown to reliably and meaningfully report on constructs related to psychopathy such as empathy (Bryant, 1982), guilt (Ferguson, Stegge, Eyre, Vollmer, & Ashbaker, 2000) and narcissism (Barry, Frick, & Killian, 2003; Thomaes, Stegge, Olthof, & Bushman, 2008).

In adults and adolescents, there has been growing empirical support for the use of self-report in the study of psychopathy (e.g. Andershed, Hodgins, & Tengstrom, 2007; Andershed et al., 2002; Dolan & Rennie, 2006, 2007; Edens, Poythress, & Watkins, 2001; Larsson, Tuvblad, Rijsdijk, Andershed, Grann, & Lichtenstein, 2007; Lilienfeld & Andrews, 1996; Sandoval, Hancock, Poythress, Edens, & Lilienfeld, 2000). In preadolescent children, only one empirical study to date has focused uniquely on the utility of self-report (Van Baardewijk et al., 2008). It involved the validation of a downward extension of the adolescent Youth Psychopathic traits Inventory (YPI; Andershed et al., 2002). This child instrument, named the Youth Psychopathic trait Inventory-Child Version (YPI-CV), is an age-appropriate adaptation of the adolescent instrument that matches the cognitive, emotional and verbal development and social realities of 9–12 year olds. The validation study reported excellent results with respect to the internal consistency of the measure: a three factor structure similar to its adolescent counterpart, comprising the three core personality dimensions of psychopathy (Cooke & Michie, 2001; grandiose-manipulative traits, callous-unemotional traits and impulsive-

irresponsible traits and behaviors) and high Cronbach's alphas (.80–.92) and test-retest reliability coefficients (ICCs) over 2 and 6 months of .77 and .76, respectively. Furthermore, the convergent and divergent validity of the three individual dimensions was shown by demonstrating unique relations of each of these dimensions to external criterion measures assessing the same construct (narcissism, empathy and impulsivity/hyperactivity/inattention-problems, respectively). Finally, like the original adolescent YPI, the child version was shown to work equally well for boys and girls.

The current study sought to expand on these findings by investigating the stability of self-reported psychopathic traits over time and by examining the concurrent and prospective association between self-reported psychopathic traits and socially relevant behaviors that have typically been associated with these traits in both adults and children: conduct problems and aggression (e.g. Christian et al, 1997; Dadds et al., 2005; Frick et al, 2003a; Hare, 2003; Kosson et al., 1990). Based on our earlier positive indications regarding the reliability and validity of self-report of psychopathic traits in children (Van Baardewijk et al., 2008), we expected to replicate earlier findings with respect to externalizing behaviors.

First, we hypothesized significant stability of self-reported psychopathic traits between baseline and follow-up (18 months later). Second, we hypothesized a positive association between psychopathic traits and conduct problems both concurrently and at follow-up. In assessing conduct problems, both self, peer and teacher reports were used to provide a wide scope on children's behavioral problems. Third, we hypothesized psychopathic traits to be related to aggression at follow-up, particularly to proactive aggression. Finally, as recent research suggests that differences in levels of stability of psychopathic traits have predictive relevance for future externalizing behaviors, we hypothesized that children with the most stable high self-reported psychopathic traits would show the worst outcome in terms of follow-up conduct problems and aggression. As there has been some discussion about the relative value of the different psychopathy dimensions (e.g. Frick & White, 2008), both the YPI-CV total score and the individual dimensions were explored within these four hypotheses.

Method

Participants

The participants were obtained from the same four medium sized primary schools in the Netherlands that had participated in the YPI-CV validation study (n=360; Van Baardewijk et al., 2008). Before the follow-up assessment one school (n=68) declined cooperation stating it was a busy time of the year. Additionally, all children (n=133) who were in grade 8 (the final grade in Dutch primary schools) during baseline assessment had finished their primary education at follow-up, and had transferred to various high schools. These children could therefore not be retested and were not included in

the present study. This resulted in a final sample size of *n*=159 (51.6% boys). No differences were found between the current sample and the children that could not be followed up in gender ($\chi^2(1)=2.35$, $p=.14$), baseline psychopathy scores ($t(313)=.15$, $p=.88$), self rated conduct problems ($t(358)=-.29$, $p=.77$), teacher rated conduct problems ($t(363)=1.39$, $p=.16$) or peer rated conduct problems ($t(327)=.54$, $p=.94$). Age, however, did differ significantly between these samples as it were the oldest children at baseline assessment that finished their primary schooling and had continued their education in high school ($t(365)=11.64$, $p<.000$). Average age of the current sample was 10.4 (*SD*=.67; range 9.1–12.3) at baseline assessment, and 11.8 (*SD*=.67; range 10.6–13.7) at follow-up. Average age of children that were not followed up was 11.35 (*SD*=.91) at baseline assessment. Most children (85%) were Caucasian; 15% had other (e.g. Surinam/Lesser Antilles, North African) or mixed ethical/cultural origins.

Measures

Youth Psychopathic trait Inventory – Child Version (YPI-CV) – Psychopathic traits were assessed using the Youth Psychopathic traits Inventory – Child Version (Van Baardewijk et al., 2008), a 50-item self-report instrument measuring the three core personality dimensions of psychopathy: grandiose-manipulative traits, callous-unemotional traits and impulsive-irresponsible traits and behaviors. The instrument was adapted from the original Youth Psychopathic trait Inventory intended for adolescents (YPI; Andershed et al., 2002). The current child version was developed for use in 9 to 12 year olds. Items are scored on a 4-point scale (*1=does not apply at all – 4=applies very well*). Sample items: "Feeling bad when you have done something wrong is a waste of time.", "It's fun to make up stories and try to get people to believe them." and "I find rules to be nothing but a nuisance". Van Baardewijk et al. (2008) reported the measure to be internally consistent. Confirmatory factor analyses showed the three factor structure to be similar to that of the original adolescent version. Cronbach's alphas of the total score and factors ranged between .80 and .92 and test-retest reliability coefficients (ICC's) over 2 and 6 months were .77 and .76 respectively. The instrument is available in English and Dutch.

Strenghts and Difficulties Questionnaire (SDQ) – conduct problems scale – The Strengths and Difficulties Questionnaire (Goodman, 1997) is a widely used 25-item behavioral screening device, including both teacher/parent and self-report versions. In the current study, only the self-report version was used, which is intended for 11 to 16 year olds, but has been used successfully in 8 to 13 year old non-clinical children as well (Muris, Meesters, Eijkelenboom, & Vincken, 2004). The measure is scored on a three-point scale: *not at all true – somewhat true – certainly true.* The instrument assesses five domains: emotional symptoms, conduct problems, hyperactivity/inattention, peer relationship problems and prosocial behavior. Each scale consists of 5

items. Only the conduct problems scale will be reported on in the current study. The internal consistency and test–retest stability of the SDQ have been reported to be satisfactory (Goodman, 1997, 2001).

Problem Behavior at School Interview (PBSI) – CD/ODD scales – Problem behavior was assessed using the ODD and CD scales from the Problem Behavior at School Interview (Erasmus MC, 2000) a 32-item teacher interview assessing externalizing behavior in children. In the current study a paper and pencil version was used. Teachers rated each child's behavior on a 5-point scale. The ODD symptoms scale comprises 5 items, for example: "This child is disobedient". The CD symptoms scale comprises 7 items, for example: "This child steals". The two scales were taken together to form one problem behavior scale. Cronbach's alpha of the combined problem behavior scale was .89.

Peer-report Measure of Internalizing and Externalizing Behavior (PMIEB) – peer-rated conduct problems – Peer-rated conduct problems was assessed using the Peer-report Measure of Internalizing and Externalizing Behavior (Weiss, Harris, & Catron, 2002), a well established peer-nomination inventory that assesses psychopathology in school-aged children. Participants were asked to select up to three of their classmates who best fit the description of conduct problems. For example: "Select up to three children who are not always honest" and "Select up to three children who take things that do not belong to them". The PMIEB validation article reported a Cronbach's alpha of .84 for this scale (Weiss et al., 2002).

Reactive and Proactive Aggression questionnaire – The RPQ (Raine, Dodge, Loeber, Gatzke-Kopp, Lynam, Reynolds, Stouthhamer-Loeber, & Liu, 2006) is a brief 23 item self-report measure aiming at measuring reactive and proactive aggression. Sample items are: "How often have you had fights with others to show who was on top" (proactive aggression) and "How often have you damaged things because you felt mad" (reactive aggression). The validation study reported a significant fit for a two factor proactive–reactive model that was replicated in an independent sub sample. Cronbach's alphas ranged from .81 to .86 for reactive aggression and .84 to .87 for proactive aggression. Additionally, the two forms of aggression differentially correlated to various types of problem behavior. The two forms of aggression were highly correlated in our sample (r=.68, p<.000). This is consistent with the RPQ validation study (Raine et al., 2006) and numerous other studies investigating proactive and reactive aggression. Therefore, in addition to calculating the 'raw' reactive and proactive aggression scores, Raine et al. (2006) proposed calculating residual scores as measures of 'pure' reactive and proactive aggression. This was done by regressing proactive aggression onto reactive aggression, and vice versa, and saving the standardized residuals.

Procedure

Baseline (December 2005) and the follow-up assessment (June 2007) were 18 months apart. Teachers had worked with the children for at least 3 months at each assessment, children had known each other for several years. At both assessments, parental consent was obtained. At baseline assessment, 95% allowed their child to take part in the study, and 99% did so at follow up. All children with parental consent completed their self and peer report questionnaires. At each assessment children filled out their questionnaires during regular school time. It was pointed out to all participants that the results would remain confidential and that neither parents nor teachers would be informed of their individual answers. Additionally, teacher reports were collected at both time points. All questionnaires were filled out both at baseline and at follow-up assessment, except for the RPQ aggression questionnaire, which was only administered at follow-up. At baseline assessment, schools were paid €200 in gift vouchers for their cooperation.

Results

Table 1 displays the untransformed descriptive statistics for both the baseline and follow-up measures. Overall, behavior problems and aggression measures were positively skewed, which is common in non-referred samples as these are generally characterized by low levels of externalizing symptoms. Therefore, square root transformations were performed prior to further analyses.

Table 1. Descriptive statistics for baseline and follow-up measures.

	Baseline assessment				Follow-up assessment			
	Mean score	*SD*	Minimum	Maximum	Mean score	*SD*	Minimum	Maximum
YPI-CV Psychopathy total score	1.63	.40	1.02	3.40	1.63	.37	1.00	2.74
YPI-CV Callous-Unemotional dimension	1.61	.46	1.00	3.47	1.49	.40	1.00	3.13
YPI-CV Grandiose-Manipulative dimension	1.42	.41	1.00	3.40	1.40	.36	1.00	2.75
YPI-CV Impulsive-Irresponsible dimension	1.92	.54	1.00	3.60	2.05	.57	1.00	3.73
PBSI conduct problems (teacher)	.54	.64	.00	2.58	.74	.78	.00	3.79
SDQ conduct problems (self)	.40	.33	.00	1.40	.38	.32	.00	1.60
PMIEB conduct problems (peers)	1.63	2.62	.00	18	5.17	7.97	.00	34
RPQ reactive aggression					.72	.36	.00	1.82
RPQ proactive aggression					.17	.24	.00	1.33

Note: YPI-CV= Youth Psychopathic traits Inventory-Child Version, SDQ = Strengths and Difficulties Questionnaire, PBSI = Problem Behavior at School Interview, PMIEB = Peer-report Measure of Internalizing and Externalizing Behavior, RPQ = Reactive and Proactive Aggression Questionnaire

Stability of self-reported psychopathic traits – Stability of psychopathic traits measured using the YPI-CV was assessed over a period of 18 months. Consistent with previous studies in this field (e.g. Barry et al., 2008; Frick et al., 2003b) average measure intraclass correlation coefficients (ICCs), with an absolute agreement definition were used. ICCs are sensitive to rank order, as well as to absolute level of scores and are therefore preferred over correlation coefficients to assess stability of scores over time. ICCs were .73 for the YPI-CV total score, .63 for the Callous-Unemotional dimension, .59 for the Grandiose-Manipulative dimension and .76 for the Impulsive-Irresponsible dimension. These results indicate moderate to high stability over a period of 18 months.

Concurrent and prospective relationships between self-reported psychopathic traits and conduct problems – Table 2 shows zero-order correlations between baseline YPI-CV total score and factor scores and peer and teacher reported problem behavior measured at baseline and follow-up. The partial correlations between the YPI-CV scores and follow-up conduct problems, each controlled for the baseline score on the conduct problems measure, are displayed between brackets.

The zero-order correlations in Table 2 revealed significant associations between YPI-CV total score and factor scores and all measures of conduct problems, both concurrently and prospectively. The partial correlations showed that psychopathic traits

Table 2. Zero-order and partial correlations between baseline YPI-CV total score and dimension scores and conduct problems measured at baseline and follow-up.

		Baseline assessment			Follow-up assessment		
		SDQ conduct problems (self)	PBSI conduct problems (teacher)	PMIEB conduct problems (peers)	SDQ conduct problems (self)	PBSI conduct problems (teacher)	PMIEB conduct problems (peers)
Baseline assessment	YPI-CV Psychopathy total score	.47**	.35**	.31**	.36** (.18*)	.38** (.19*)	.37** (.20*)
	YPI-CV Callous-Unemotional dimension	.36**	.29**	.21**	.29** (.14)	.34** (.18*)	.27** (.17*)
	YPI-CV Grandiose-Manipulative dimension	.38**	.26**	.25**	.27** (.11)	.31** (.16)	.29** (.15)
	YPI-CV Impulsive-Irresponsible dimension	.49**	.35**	.35**	.39** (.20*)	.35** (.16)	.41** (.20**)

Note: Partial correlations are in brackets. YPI-CV= Youth Psychopathic traits Inventory-Child Version, SDQ = Strengths and Difficulties Questionnaire, PBSI = Problem Behavior at School Interview, PMIEB = Peer-report Measure of Internalizing and Externalizing Behavior, ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed). *n* =127 (PBSI conduct problems at follow-up) to *n*=149 (PMIEB conduct problems at follow-up)

Table 3. Zero-order and partial correlations between baseline YPI-CV total score and dimension scores and residual proactive and reactive aggression at follow-up

		Follow-up assessment			
		RPQ proactive aggression	RPQ reactive aggression	RPQ residual proactive aggression	RPQ residual reactive aggression
Baseline assessment	YPI-CV Psychopathy total score	.52** (37**)	.44** (.31**)	.30**(.18*)	.10 (.07)
	YPI-CV Callous-Unemotional dimension	.41** (28**)	.31** (.18**)	.28** (.18*)	.02 (–.01)
	YPI-CV Grandiose-Manipulative dimension	.39** (25**)	.35** (.23**)	.21* (.10)	.10 (.08)
	YPI-CV Impulsive-Irresponsible dimension	.55** (.41**)	.49** (.36**)	.31* (.19*)	.13 (.10)

Note: Partial correlations are in brackets. YPI-CV= Youth Psychopathic traits Inventory-Child Version, RPQ = Reactive and Proactive Aggression Questionnaire, ** Correlation is significant at the 0.01 level (2-tailed), * Correlation is significant at the 0.05 level (2-tailed)., *n*=146

were related to follow-up conduct problems even after controlling for initial levels of these problems, although a number of partial relations just failed to reach conventional levels of significance (*p*=.06 and .07), mainly those involving the Grandiose-Manipulative dimension.

Prospective relationships between self-reported psychopathic traits and proactive and reactive aggression –To investigate further the prospective relationship between self-reported psychopathic traits and externalizing behaviors, correlations between baseline YPI-CV scores and aggressive behaviors 18 months later were calculated. Correlations between baseline psychopathy scores and both 'raw' and residual proactive and reactive aggression at follow-up are displayed in Table 3. Partial correlations, controlled for baseline self-reported conduct problems (SDQ) are displayed in brackets. As can be read from Table 3 the YPI-CV total score and all dimension scores were positively related to 'raw' proactive and reactive aggression at follow-up. With respect to the residual aggression measures, the YPI-CV scores were positively related to residual proactive aggression, even when controlling for baseline conduct problems, but not to residual reactive aggression.

The relationship between stability of self-reported psychopathic traits and externalizing behavior*s* – To investigate whether the 18-month stability of psychopathy scores would be related to conduct problems and aggression at follow up, a stability variable was composed based on a median split on both baseline and follow-up YPI-CV scores following the procedure by Hawes & Dadds (2007). Three groups were created: 1) 'stable-high' (*n*=51) constituted participants with scores above the median at baseline and follow-up, 2) 'stable-low' (*n*=58) constituted those with

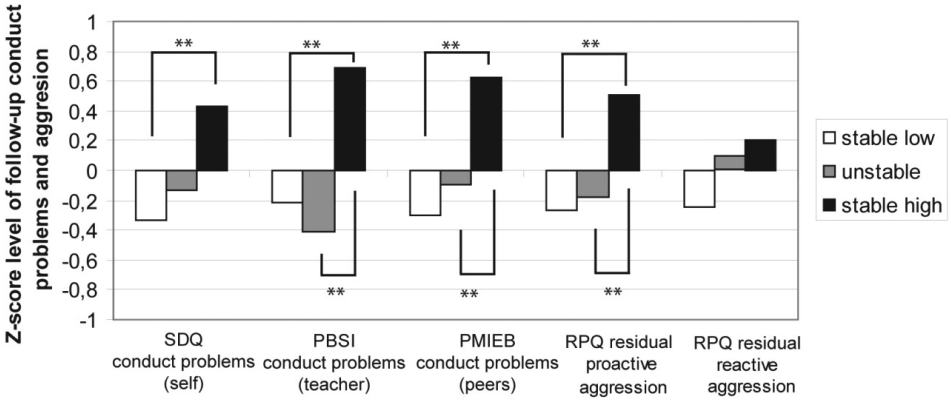
scores below the median at both measurements and finally, 3) the 'unstable' group (n=50) constituted those whose scores had changed from above to below the median between baseline and follow-up, or vice versa. This procedure was performed for the YPI-CV total score and the factor scores individually, thus creating 3 stability groups for each of these four scores. A series of ANOVA analyses were conducted to determine whether groups differed in levels of follow-up conduct problems and aggression. Significant main effects were found for the YPI-CV total score and all factor scores on all measures of conduct problems (ranging from F=4.00, p<.05 to F=16.92, p<.000) and on residual proactive aggression (ranging from F=6.09, p<.01 to F=8.16, p<.000). For residual reactive aggression, no significant main effects were found for group. To identify the differences in levels of conduct problems and residual proactive aggression at follow-up among the three stability groups, posthoc analyses with Bonferonni correction for multiple comparisons were performed. Because a number of outcome measures had been transformed before analyses to correct for a positive skew, all scores were standardized (Z-scores with M=0 and SD=1) to aid in the interpretation. Table 4 shows the difference in levels of follow-up conduct problems and aggression between stability groups. With few exceptions, the 'stable high' groups displayed significantly higher scores than both other groups on conduct problems and residual proactive aggression at follow-up. This pattern was found for the YPI-CV total score as well as for the three factors. The 'unstable'

Table 4. Differences between the three YPI-CV stability groups on standardized mean scores of follow-up conduct problems and residual aggression.

		Follow-up conduct problems			Follow-up aggression	
		SDQ conduct problems (self)	PBSI conduct problems (teacher)	PMIEB conduct problems (peers)	RPQ residual proactive aggression	RPQ residual reactive aggression
		Stable high	Stable high	Stable high	Stable high	Stable high
YPI-CV Psychopathy Total score	Unstable	.45	1.09**	.69**	.66**	.10
	Stable low	.76**	.92**	.93**	.72**	.41.
YPI-CV Callous-Unemotional dimension	Unstable	.27	.70**	.51*	.32	.11
	Stable low	.55**	.77**	.79**	.72**	–.02
YPI-CV Grandiose-Manipulative dimension	Unstable	.50*	.48.	.50*	.42	–.16
	Stable low	.73**	.86**	.76**	.68**	.30
YPI-CV Impulsive-Irresponsible dimension	Unstable	.67**	.95**	.81**	.56*	.22.
	Stable low	.89**	.79**	.74**	.64**	.31

Note: Differences are calculated columns-rows. YPI-CV= Youth Psychopathic traits Inventory-Child Version, SDQ = Strengths and Difficulties Questionnaire, PBSI = Problem Behavior at School Interview, PMIEB = Peer-report Measure of Internalizing and Externalizing Behavior, RPQ = Reactive and Proactive Aggression Questionnaire, ** Difference is significant at the 0.01 level (2-tailed). * Differences is significant at the 0.05 level (2-tailed). n (Stable high)=51, n (Unstable)=50, n (Stable low)=58.

Figure 1 Differences in follow-up conduct problems and aggression between stability groups of YPI-CV total score



Note: YPI-CV= Youth Psychopathic traits Inventory-Child Version, PBSI = Problem Behavior at School Interview, SDQ = Strengths and Difficulties Questionnaire, PMIEB = Peer-report Measure of Internalizing and Externalizing Behavior, RPQ = Reactive and Proactive Aggression Questionnaire** Difference is significant at the 0.01 level (2-tailed). * Difference is significant at the 0.05 level (2-tailed). *N* (Stable high)=51, *n* (Unstable) = 50, *n* (Stable low) = 58.

and 'stable low' groups did not differ significantly on any of the measures and are not displayed in the table. As no main effect was found, no difference by group was found for residual reactive aggression at follow-up. To aid in the interpretation, Figure 1 shows the standardized mean scores of all outcome variables as a function of stability of psychopathic traits (total score of the YPI-CV). For space limitations, only the figure with the YPI-CV total score is presented, as the pattern for the individual factors was generally the same.

Discussion

The current study investigated the 18-month stability of self-reported psychopathic traits and their associations with conduct problems and aggression in a sample of 9–12 year old children from the community. Furthermore, we investigated whether individuals showing higher levels of stability of psychopathic traits had higher levels of follow-up conduct problems and aggression. As expected, YPI-CV scores were found to be moderately to highly stable over 18 months. These stability indices were largely comparable to previous findings over comparable periods, both in adolescents and children (Barry et al., 2008; Dadds et al., 2005; Forsman, Lichtenstein, Andershed, & Larsson, 2008; Frick et al., 2003b; Muñoz & Frick, 2007) supporting the notion that psychopathic traits are, even at this young age, stable temperamental characteristics and, specifically, that self-report can capture these traits. Furthermore, we found self-reported psychopathic traits to be related to higher rates of conduct problems both concurrently and at follow-up. Importantly, these relations remained even after controlling for initial conduct problems. Furthermore, our finding were consistent

over reporters. Not just the participants themselves, but also their peers and their teachers reported higher levels of conduct problems at follow-up for those who had reported higher psychopathic traits at baseline. Findings pertaining to the relation with aggression were also generally consistent with our hypothesis. They showed self-reported psychopathic traits to be associated with proactive as well as reactive aggression at follow-up. Again, these findings could not fully be attributed to baseline conduct problems. When controlling for the overlap between proactive and reactive aggression, thereby separating the two and creating 'pure' measures of proactive and reactive aggression, only the relation between psychopathic traits and proactive aggression remained. This is in line with earlier findings in adult, adolescent and child psychopathy research that has shown psychopathic traits to be related to both types of aggression, but particularly to premeditative, goal-directed and 'cold blooded' proactive forms of aggression not shared by those with low psychopathic traits (Flight & Forth, 2007; Frick et al., 2003a; Porter & Woodworth, 2006; Waschbusch & Willoughby, 2008; Woodworth & Porter, 2002).

Regarding stability of psychopathic traits, the current study showed that children with persistently high levels over a period of 18 months exhibited higher levels of externalizing behaviors (conduct problems and proactive aggression) at follow-up than those with unstable or stable low psychopathic traits. These findings are consistent with the few studies that have investigated the predictive value of stability of psychopathic traits in youth and that found high stability of psychopathic traits to predict seriousness of antisocial behavior in adolescents (Pardini & Loeber, 2008) and worse outcome of a parent-training intervention in clinic-referred preadolescent boys (Hawes & Dadds, 2007). Interestingly, hardly any differences in follow-up externalizing were found between children showing consistently low levels of psychopathic traits and those with high levels on one measurement only. This finding carries clinical value, as the present study and previous studies also show that a single assessment of psychopathic traits is related to future externalizing behaviors. Findings on stability thus may suggest that repeated assessment of psychopathic traits in children may add to the prediction of these behaviors.

The difference between children who have stable psychopathic traits versus unstable or low stable traits may be explained by factors not measured in the current study, such as social relations, parenting, or biological markers. For example, Barry et al. (2008) showed social competence and social status to influence the stability of the narcissistic and impulsive-irresponsible components of psychopathic traits in aggressive children. Social impairments were associated with persistence of psychopathic traits. It may also be that the psychopathic traits of children who scored occasionally high in our study have a different genetic etiology than those scoring persistently high. Several investigators have speculated that the stability of psychopathic traits is largely driven by neurobiological factors (Blair, Peschardt, Budhani, Mitchell, &

Pine, 2006; Kiehl, 2006). Recent twin studies have indeed shown substantial genetic contributions to the stability of psychopathic traits during adolescence (age 16–19; Forsman et al., 2008) and from adolescence into adulthood (Blonigen, Hicks, Krueger, Patrick, & Iacono, 2006). Regardless of the causes, the current study supported the notion that higher stability is related to higher levels of problematic outcome and suggests that multiple assessments rather than single assessments could add to the predictive accuracy of psychopathy assessment in youth.

Concluding, with respect to the stability and concurrent and prospective associations between psychopathic traits and externalizing behaviors, our findings confirm past findings in both adolescents (e.g. Andershed et al., 2002, Campbell, Porter, & Santor, 2004; Pardini & Loeber, 2008) and children using teacher and parent report (Christian et al., 1997; Dadds et al., 2005; Hawes & Dadds, 2007; Lynam, 1997). Preadolescent children should hence be considered reliable and valid reporters of psychopathic traits, and the YPI-CV a useful instrument for such assessment.

Our study has several strengths. First, we used a restricted preadolescent age-range, so that no contamination by age-appropriate adolescent behavioral problems occurred that could have clouded the results. A second strength was the use of different informants, both the child itself, peers and teachers provide a unique perspective on behavioral and social functioning, which in the current study showed consistent. However, the present study should also be seen in the light of a number of limitations that will need addressing in future research. First, the YPI-CV has currently only been tested in community samples and it is a, yet unanswered, empirical question whether it can be used successfully in aggressive, adjudicated or high-risk groups. Second, the current study only supports the reliability and validity of self-reported psychopathic traits in a research situation. No conclusion can be drawn from the current research about the utility of the YPI-CV when anonymity is not guaranteed and, particularly, for making predictions about individual children (e.g. clinical practice). Third, with respect to results on the predictive utility of stability of psychopathic traits, the current limited design did not allow for a separation of stability of psychopathic traits from overlapping stability of conduct problems in predicting outcome. Therefore, even though they are consistent with previous research, the present findings should be interpreted with caution. Future studies should continue to investigate the predictive value of repeated assessment of psychopathic traits with more advanced designs and methodologies (e.g. growth curve modeling techniques). Fourth, because a number of criterion variables (SDQ conduct problems, RPQ aggression) were, like psychopathy, measured through self-report, some correlations could have been inflated due to shared method variance. Finally, the current study did not actively compare the value of self-report to that of external measures of psychopathic traits. While the present study as well as the previous study investigating the YPI-CV (Van Baardewijk et al., 2008) clearly show self-report of psychopathic traits to be

reliable and valid in children, previous research has shown that parent/teacher reports measure psychopathic traits reliably and validly as well (e.g. Christian et al., 1997; Dadds et al., 2005; Kimonis et al., 2006; Lynam, 1997; Piatigorsky & Hinshaw, 2004). Future research could compare the relative importance of each type of informant. It would be worth investigating whether pooling information from multiple sources (i.e. parents, teachers and children) has greater diagnostic and predictive power than relying on a single source (Frick & Hare, 2001). Ideally, this pooling would extend beyond questionnaire measures which are dependent on rater characteristics. For example, Kimonis and colleagues (2007), showed that combing scores on the ICU (Essau et al., 2006) with the processing of emotional pictures increased the predictive accuracy for externalizing behaviors over one of the two predictive variables alone. In reference to the current study, as proactive aggression seems typically associated with psychopathic traits (and tends to overlap using questionnaire measures) one could test whether scores on laboratory aggression paradigms distinguishing these two (e.g. Reidy, Zeichner, Miller, & Martinez, 2007) could be used to increase diagnostic power for psychopathic traits in children.

To conclude, the cross-sectional validation study of the YPI-CV showed this instrument to be highly reliable and supported its construct validity (Van Baardewijk et al., 2008). The current study expanded on these findings, showing that scores on the YPI-CV were related to concurrent and future socially harmful behaviors, were relatively stable over time and that higher stability was related to higher levels of externalizing behaviors. These findings thus further support the notion that psychopathic traits can be measured at a young age and that self-report, by means of the Youth Psychopathic traits Inventory – Child Version can provide an important additional point of view.

4

Development and tests of short versions of the Youth Psychopathic traits Inventory and the Youth Psychopathic traits Inventory-Child Version

Van Baardewijk, Y., Andershed, H., Stegge, H., Nilsson, K. W., Scholte, E., & Vermeiren, R. (2010). Development and tests of short versions of the Youth Psychopathic traits Inventory and the Youth Psychopathic traits Inventory-Child Version. *The European Journal of Psychological Assessment 26 (2)*, 122–128

4. Development and tests of short versions of the Youth Psychopathic traits Inventory and the Youth Psychopathic traits Inventory-Child Version

Abstract

The adolescent Youth Psychopathic traits Inventory (YPI) and its child version (YPI-CV) are sound but lengthy instruments for measuring psychopathic traits in youths. The aim of the current study was to develop psychometrically strong short versions of these instruments. Samples used for item reduction were community samples of adolescents (*n*=2105, age 16–19, 49% boys) and children (*n*=360, age 9–12, 52% boys). Step-wise parallel reduction using Principal Components Analyses and content related arguments resulted in two highly similar short instruments (18 items). In both versions, near identical and theoretically comprehensible three factor structures were demonstrated, which were cross-validated in independent samples (CFI=.97 and .97; RMSEA=.044 and .038, respectively). Results were similar for boys and girls. The short instruments were reliable (Cronbach's alphas of .85 and .83) and covered all core characteristics of the psychopathic personality construct. The short versions showed high convergence with the original long instruments (*r*=.95 and .93, respectively) and similar correlations to external criterion measures of conduct problems. Therefore, the abbreviated versions are practical and valid alternatives for the original YPIs when administration time is limited.

Introduction

Psychopathy is a constellation of personality traits such as callousness, manipulativeness, egocentricity, impulsivity and a need for stimulation (e.g., Cleckley, 1988; Hare, 2003) that can be classified into three dimensions: affective callous-unemotional traits, interpersonal grandiose-manipulative traits and impulsive and irresponsible behaviors (Cooke and Michie, 2001). The psychopathic constellation has widely been recognized as an important predictor of violence and criminality among adults (Hare, 2003; Douglas, Vincent, & Edens, 2006). Recently, researchers have widened their focus to the study of psychopathic traits in adolescents and children. Investigating psychopathic traits in these age groups is of clinical interest because it can help us gain insight into the different pathways towards severe antisocial behavior and can increase our understanding of the etiology of this socially devastating adult personality disorder. To date, studies of psychopathic traits in youth have yielded striking similarities to those in adults in terms of stability, relations to conduct problems and aggression and emotional and cognitive functioning (for reviews see e.g., Lynam & Gudonis, 2005; Kotler & McMahon, 2005).

Several instruments, using different informants, have been developed for measuring psychopathic traits in youth. Some measures rely on interviews and file information such as the youth version of the Psychopathy Checklist (PCL-YV; Forth, Kosson, & Hare, 2003). When no file information is available, parent and teacher rating measures, such as the Antisocial Process Screening Device (APSD, Frick & Hare, 2001) can be used. Additionally, self-report measures, such as the APSD-self-report (Caputo, Frick, & Brodsky, 1999) and the Youth Psychopathic traits Inventory (YPI; Andershed, Kerr, Stattin, & Levander, 2002) are available. Self-report measures provide an important perspective on youth's psychopathic traits because youth, unlike parents or teachers, are in the unique position to report on behaviors across a range of situations, including the home, the classroom and among peers. Of the self-report instruments now available for measuring psychopathic traits in youths, the Youth Psychopathic traits Inventory (YPI) has been considered particularly favorable by several reviewers (e.g. Kotler & McMahon, 2005; Vaughn & Howard, 2005) and was found to be a superior measure of psychopathic traits to the self-report version of the APSD (Poythress, Dembo, Wareham, & Greenbaum, 2006). This 50-item research instrument has several strengths. First, on the conceptual level, while focussing on the core features of psychopathy, the YPI was specifically developed to avoid a socially desirable response bias by describing feelings and opinions as desirable competences, rather than deficiencies or socially undesirable behaviors. Second, the YPI comprises ten reliable subscales which combine into a three factor structure that is consistent with recent theoretical models (e.g. Andershed et al., 2002; Larsson, Andershed, & Lichtenstein, 2006). The internal consistencies of these three YPI dimensions and the total score have generally been good to excellent, with Cronbach's alpha's for total score ranging from .87 to .92, the callous-unemotional dimension from .74 to .81, grandiose-manipulative from .82 to .90 and impulsive-irresponsible from .68 to .85.) (Andershed et al., 2002; Larsson, Andershed, & Lichtenstein, 2006; Skeem & Cauffman, 2003; Andershed, Hodgins, & Tengström, 2007). Fourth, the instrument seems to work equally well in boys and girls: the factor structures as well as the relations to external criteria are similar in both groups (Andershed et al., 2002). Fifth, even though it was developed and validated as a research instrument for community samples, its basic validity has also been demonstrated in forensic and other institutional settings. For example, the YPI is significantly correlated with antisocial behavior (violent and non-violent) both in community (correlations ranging from .33 to .45) and forensic settings (r=.21 to .66) (Andershed et al., 2002; Dolan & Rennie, 2007; Larsson, Tuvblad, Rijsdijk, Andershed, Grann, & Lichtenstein, 2007; Poythress et al., 2006; Skeem & Cauffman, 2003). Additionally, the instrument has been shown to be able to identify a severe and aggressive subgroup of antisocial adolescents in both types of samples (Andershed et al., 2002; Dolan & Rennie, 2006). The validity of the YPI has further been demonstrated by significant correlations with the

Psychopathy Checklist: Youth Version (*r*=.29 to .48; Andershed et al., 2007; Dolan & Rennie, 2006; Skeem & Cauffman, 2003). Finally, the YPI instrument is applicable to a wide age range as near identical versions for adolescents (YPI; Andershed et al., 2002) and children (YPI – Child Version; Van Baardewijk et al., 2008) are available. This child version is an age-appropriate adaptation of the original YPI. Its validation study reported a three factor structure similar to the original YPI with good to excellent internal consistencies. Like the original adolescent YPI, the child version works equally well for boys and girls.

While the YPI measure thus shows a number of excellent properties, the instrument may be too elaborate for most purposes. The YPI allows for research on symptom level by providing reliable 5-item subscales for each of the ten core psychopathy symptoms, but most researchers to date have used only the total score and three dimension scores (e.g. Forsman, Lichtenstein, Andershed, & Larsson, 2008; Kansi, 2003). Therefore, for most studies, the full fifty items and lengthy twenty minutes administration time may not be necessary. For that reason, the purpose of this study is to come up with psychometrically strong short versions of the adolescent and child YPI instruments that can be of use for large multivariate data collections in which administration time is valuable and limited. We do this through a step-wise selection process using a series of exploratory factor analyses and content related arguments. The final models are then cross-validated in independent samples using confirmatory factor analyses and external validity is tested and compared with the original YPI measures.

Materials and Methods

Samples and procedure

Adolescent YPI data were obtained in a school-based community sample of a total of 4050 adolescents (age 16–19, 49% boys) from a medium-sized county in Sweden. The students were asked to complete their self-report questionnaires in their classroom during a one-hour session under the supervision of a specially trained research assistant. The research assistant informed the students about the purpose of the study and assured confidentiality. Consent rate was 95%.

YPI – Child Version data were derived from two independent school-based samples of 9 to12 year old Dutch children. Sample 1 consisted of *n*= 360 children (52% boys) with a mean age of 10.9 (*SD*=0.9). Sample 2 consisted of *n*= 430 children (54% boys) with a mean age of 11.4 (*SD*=0.8). Parental consent rate was 95% and 96%, respectively. Children completed their self-report questionnaires, which were part of a larger study, in two one and a half hour sessions during regular school time over a period of one week, supervised by a trained research assistant.

Because large adolescent and child samples were available, a cross-validation procedure was carried out in order to confirm results of the shortened scales in a second independent sample. The adolescent sample was randomly split into two

equally sized samples, to be named adolescent samples 1 (*n*=2105, 49% boys) and 2 (*n*=2159, 49% boy), respectively in the following text. Of the YPI – Child Version datasets, child sample 1 was used to develop the short version, and child sample 2 was used to confirm these results.

Measures

Youth Psychopathic traits Inventory – The YPI is a 50-item adolescent self-report questionnaire designed to measure the core traits of the psychopathic personality (Andershed et al., 2002). The YPI measures each psychopathic trait with five items making up ten different subscales (Andershed, et al., 2002). In line with Cooke & Michie's (2001) conceptualization of psychopathy, these subscales manifest in a three factor structure consisting of (1) a Grandiose-Manipulative dimension (including the subscales dishonest charm, grandiosity, lying and manipulation), (2) a Callous-Unemotional dimension (including the subscales callousness, unemotionality and remorselessness), and (3) an Impulsive-Irresponsible dimension (including the subscales impulsiveness, thrill-seeking and irresponsibility). Each item in the YPI is scored on a four-point Likert scale ranging from *Does not apply at all* to *Applies very well*. The YPI is available in multiple languages, including English, Swedish, Dutch, French, German, Croatian, Icelandic, Korean and Russian.

Youth Psychopathic traits Inventory – Child Version – The Youth Psychopathic trait Inventory-Child Version (YPI-CV; Van Baardewijk et al., 2008) is an age-appropriate adaptation of the original YPI that matches the cognitive, emotional and verbal development and social realities of 9–12 year olds. The composition of the YPI-CV is identical to the adolescent YPI, comprising 50 items that combine into 10 subscales. The validation study reported a three factor structure similar to the original YPI with good to excellent internal consistencies (Cronbach's alpha's of .80–.89 for the dimensions and .92 for the total score). The YPI-CV was shown to be stable over 2-month and 6-month periods (total score ICCs of .77 and .76, respectively). The YPI-CV is currently available in English and Dutch.

Results

The purpose of shortening the YPI instruments was to create two brief, psychometrically strong and closely related self-report measures for assessing psychopathic traits in youth. Item-reduction was achieved in samples 1 through a step-wise selection process using principal components analysis (using promax rotation with a theory driven forced three factor solution) on both questionnaires. In addition, content related arguments were used for the selection of items to be retained. In step 1, items with loadings below .30 or loadings higher than .30 on more than one factor were dropped (Stevens, 1992). From the YPI, 13 items were dropped in this step and 17

items from the YPI-CV. In step 2, the remaining items were factor analyzed again and item correspondence between the two questionnaires was assessed. Items that were present in both questionnaires were retained. An additional 9 and 5 items were dropped in this step from the YPI and YPI-CV, respectively. In step 3, remaining items were again factor analyzed in their individual samples. Further reduction of the number of items was attempted using empirical as well as content related arguments. Empirical arguments were: strength of loading, distinctiveness (a distinct item loads strongly in one factor and close to zero in the two other factors), and reported problems with specific items in previous empirical studies. Content related criteria were: representiveness, relevance and complexity, with agreement reached between the first and second authors. In this step, 10 items were dropped from both questionnaires. In the fourth and final step, the remaining items were factor analyzed again.

This four step item reduction procedure resulted in nearly identical and distinct three factor solutions for both the adolescent and child version of the YPI. The resulting short instruments consisted of 18 items, 6 items for each of the three factors. Of the 18 items, 17 items had similar content -yet age appropriate wording- in both the YPI-short (YPI-S) and the YPI-short Child Version (YPI-SCV), while only one item (5) differed between the two short versions. Table 1 displays the items of the short version and their loading on the three factors. As can be seen, all central psychopathy characteristics included in the original YPI and YPI-CV are also conceptually present in the abbreviated versions. The Grandiose-Manipulative factor comprises the concepts of dishonest charm, manipulation/lying and grandiosity. The Callous-Unemotional factor comprises the concepts of callousness, unemotionality and remorselessness and the Impulsive-Irresponsible factor features impulsivity, irresponsible behavior and thrill-seeking/proneness to boredom.

Testing the short versions

To confirm the findings from the principal components analyses in samples 1, confirmatory factor analyses were used to examine the fit of the short versions factor models in samples 2. The comparative fit-index (CFI) and the Root Mean Square Error of Approximation (RMSEA) were calculated with EQS as the computational program. Table 2 shows the model fit indices for both questionnaires in their respective cross-validation samples (samples 2). A CFI of .90 and higher, and an RMSEA of .08 and lower are generally considered to indicate an adequate fit, while CFI of .95 and over and RMSEA of .05 and lower are considered a good fit (Hu & Bentler, 1999). The results indicated an excellent fit of the YPI short versions on the sample 2 data showing that the YPI short versions models found in samples 1 were valid. Additionally, fit indices for boys and girls separately and the cross-gender fit were calculated in the full samples. Table 2 shows the results for boys and girls to be quite similar for both questionnaires, cross-gender fit indices were adequate to good.

Table 1. Factor structure of short versions of the YPI (n=2105) and YPI-CV (n=360) in samples 1.

YPI – Adolescent version	Factors			YPI – Child Version	Factors		
	1	2	3		1	2	3
20. It's easy for me to manipulate people.	**.77**	.06	.01	It's easy for me to make other people do things that suit me well.	–.02	–.06	**.75**
14. I have the ability to con people by using my charm and smile.	**.82**	–.15	.06	I can fool others by acting extra nice and sweet.	.11	–.03	**.65**
15. I am good at getting people to believe me when I make something up.	**.75**	–.10	.01	I am good at getting people to believe in what make up.	.10	–.08	**.65**
19. I have talents that go far beyond other people's.	**.66**	.14	–.14	I am much more talented than other people.	.01	–.17	**.64**
38. When I need to. I use my smile and my charm to use others.	**.58**	.10	.10	When I need to I will act extra nice and sweet so others will do exactly what I want	.21	.02	**.54**
41. I am destined to become a well-known. important and influential person.	**.54**	.08	–.10	I will become a well-known and important person. I know that already.	.12	.11	**.37**
44. To feel guilty and remorseful about things you have done that have hurt other people is a sign of weakness.	–.04	**.71**	.02	It's weak to feel guilty when you have hurt others.	**.72**	–.15	.11
12. I think that crying is a sign of weakness. even if no one sees you.	–.01	**.70**	.03	I think that crying is weak. even if no one sees you.	**.60**	–.08	.15
39. I don't understand how people can be touched enough to cry by watching things on TV or movie.	–.03	**.68**	–.10	I don't understand how people can cry from watching TV or a movie.	**.59**	.09	–.06
17. When other people have problems. it is often their own fault. therefore. one should not help them.	.07	**.62**	.05	When other people have problems. it is usually their own fault and that's why you should not help them.	**.35**	.10	.03
25. To be nervous and worried is a sign of weakness.	.00	**.59**	.11	It's weak to feel nervous or worried.	**.76**	.06	–.13
45. I don't let my feelings affect me as much as other people's feelings seem to affect them.	.16	**.58**	–.04	Feelings are less important to me than they are for others.	**.65**	.06	–.04

Table 1 (continued)

YPI – Adolescent version	Factors				YPI – Child Version	Factors			
	1	2	3			1	2	3	
32 It often happens that I do things without thinking ahead.	–.10	–.01	**.85**		*Identical*	.06	**.80**	–.04	
18 It often happens that I talk first and think later.	–.12	.09	**.79**		*Identical*	–.11	**.78**	.02	
9. I consider myself as a pretty impulsive person.	.16	–.17	**.58**		I think of myself as someone who does things suddenly. without thinking.	–.14	**.75**	.07	
29 I get bored quickly by doing the same thing over and over.	.06	.00	**.54**		*Identical*	.19	**.37**	.02	
34. It has happened several times that I've borrowed something and then lost it.	.00	.17	**.48**		*Identical*	.11	**.54**	–.06	
5. I have probably skipped school or work more than most other people.	.16	.02	**.32**		I find rules to be nothing but a nuisance	.26	**.42**	.04	
				Total					Total
Percentage explained by the factors	26.49	10.44	8.31	45.24	Percentage explained by the factors	23.11	11.09	8.3	42.50

Note: Extraction Method: Principal Component Analysis. Rotation Method: Promax with Kaiser Normalization.

Table 2 Confirmatory factor analyses fit indices (CFI and RMSEA) for the YPI-S and YPI-SCV in samples 2

	N valid	CFI	RMSEA	90% confidence interval RMSEA
YPI-S				
Sample 2	1812	.97	.044	.040 – .047
Boys (full sample)	1749	.92	.050	.046 – .053
Girls (full sample)	1867	.93	.044	.040 – .047
Two sample analyses (boy/girl)	3616	.92	.044	.042 – .047
YPI-SCV				
Sample 2	348	.97	.038	.026 – .048
Boys (full sample)	367	.94	.041	.030 – .051
Girls (full sample)	324	.90	.055	.045 – .065
Two sample analyses (boy/girl)	691	.90	.046	.039 – .053

Note: CFI = comparative fit-index. RMSEA = Root Mean Square Error of Approximation

To further test the quality of the abbreviated instruments reliability indices and correlations between the original measures and their abbreviated versions were calculated. Cronbach's alpha's of total scores and factors scores of both the short and original long versions are displayed in Table 3.

Table 3. Cronbach's alphas of the original and short YPIs, correlations between the original and short YPIs and correlations with problem behavior in samples 1 and 2

YPI-S	Sample 1				Sample 2			
	CU	GM	II	T	CU	GM	II	T
Cronbach's alphas (original version to the left and SV to the right)	.82/.75	.91/.79	.83/.68	.93/.85	.81/.74	.91/.81	.82.68	.93/.83
Correlations with original YPI- factors and total score (all $p<.0001$)	.88	.92	.86	.95	.87	.89	.87	.93
Correlations with conduct problems (original version to the left and SV to the right) (all $p<.001$)	.44/.38[3]	.44/.38[3]	.53/.42[1]	.54/.50[4]	.41/.35[1]	.42/.35[2]	.48/.37[1]	.51/.46[3]
YPI-SCV								
Cronbach's alphas	.83/.69	.86/.71	.78/.70	.91/.80	.80/.69	.89/.77	.84/.74	.92/.81
Correlations with original YPI- factors and total score (all $p<.0001$)	.90	.88	.84	.93	.88	.90	.85	.94
Correlations with conduct problems (original version to the left and SV to the right) (all $p<.001$)	.45/.38[4]	.28/.24[4]	.36/.29[4]	.45/.41[4]	-	-	-	-

Note: CU= Callous-Unemotional, GM=Grandiose-Manipulative, II=Impulsive-Irresponsible, T=Total score
1 = difference in correlations between long version and short version to criterion variable is significant at $p<.00$ level (Fisher Z-transformation used); 2=$p<.01$; 3=$p<.05$; 4=n.s.

Reduced reliability is a likely result consequence of reduced test length. However, as shown in Table 3, despite the removal of nearly two-thirds of the items, the reliability coefficients of the short versions could generally be considered satisfactory. Correlations between the abbreviated questionnaires and their original versions in both samples are also displayed in Table 3. High correspondence was found between the original measures and their shortened versions in both samples.

The short versions were then compared with the original versions in terms of their relation to conduct problems. For the YPI-CV, conduct problem behavior measures were only available for one of the samples (sample 1). The self-report SDQ conduct problems subscale (Goodman, 1997) was used as a criterion measure in this child sample. In the adolescent samples, 16 self-report items about concrete conduct problems (aggressive and non-aggressive) during the last 12 months were used (Andershed et al., 2002). Table 3 displays the correlations of both the original and short versions to these measures of conduct problems and these showed quite similar for the original and shortened measures. Differences for the child version were not significant, however, due to the large sample size (and resulting power) most differences did reach significance in the adolescent sample. With respect to the

cross-validation, high similarity was found for all results between samples 1 and 2 in both the adolescent and child groups.

Discussion

The aim of this study was to create brief, psychometrically strong, parallel versions of two sound self-report instruments for investigating psychopathic traits in youth: the YPI and YPI-CV. Step-wise parallel reduction of the items of both questionnaires resulted in two highly similar instruments (18 items), which we named the YPI-Short Version (YPI-S; the adolescent version) and the YPI-Short Child Version (YPI-SCV; the child version). In both versions, identical and theoretically comprehensible three factor structures were demonstrated, that were confirmed in independent samples. These factor structures were seen in both boys and girls. Despite the deletion of two-thirds of the items, the abbreviated instruments were reliable and covered all core characteristics of the psychopathic personality construct. The short versions showed high convergence with the original long instruments and similar correlations to external criterion measures were found for both the long and short versions. These findings cross-validated from one sample to another. The fact that two very similar short instruments with good psychometric properties could be construed despite differences in item-wording as well as age and language of the reference samples, underscores the validity of the YPI instruments, and lends further support to the notion that the manifestation of psychopathic traits is similar across age groups (Lynam & Gudonis, 2005).

Some limitations of the current study will need to be addressed in future research. First, all data in this paper were from an administration of the long form of the YPIs. This may have resulted in inflated correlations because all the items and answers on the abbreviated versions were shared with the original ones. Therefore, it is important that future studies use administrations of the long and short versions in the same sample to test for the true overlap between both versions and relations to external criteria. Second, external validation of the short instruments at present is limited and should be conducted in depth. Future studies could further test the validity of the YPI short versions by relating them to offending, emotional reactivity and other criteria relevant to the psychopathy concept. Second, the current short versions were developed using community samples only and await further testing in institutional, high-risk and forensic samples. Specifically to these populations, while the YPI was constructed specifically to minimize the influence of response bias by assessing psychopathic traits indirectly and describing them as strengths and abilities, it should be noted that its effectiveness in this regard has not been empirically tested. This should be a priority before the YPI instruments are used in settings where anonymity of the respondent cannot be guaranteed.

Research on the development of psychopathy is of pivotal importance. Having a short, yet reliable and valid, self-report instrument available for a broad age range could enable more researchers to accumulate much needed knowledge about this important construct in youth.

5

Psychopathic traits and social functioning in children

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5. Psychopathic traits and social functioning in children

Abstract

The current cross-sectional study investigated the relationship between self reported psychopathic traits and social functioning in children. The limited data available on this relationship show that children with high levels of psychopathic traits are not well liked by their peers (Barry, Barry, Deming, & Lochman, 2008; Piatigorsky & Hinshaw, 2004) and exhibit lower social competence (Barry et al., 2008). The present study sought to expand on these findings by exploring the relationship between psychopathic traits in children and a range of social functioning variables: social emotions, social goals and social status. Participants were 9–12 year old children (*n*=669, 47% boys) from the community. As expected, the general finding was that psychopathic traits were negatively related to all social functioning variables, though the relations were generally modest in size. Importantly, the results varied between the three dimensions of psychopathy, with the Callous-Unemotional dimension showing the most consistent negative relations. It was concluded that children with high levels of psychopathic traits suffer from impaired social functioning emotionally, motivationally, and interpersonally and that these problems may be important targets for future interventions for this group.

Introduction

To date, few studies have investigated psychopathic traits in children in relation to social functioning. The available limited data do, however, show that children with high levels of psychopathic traits are not well liked by their peers (Barry, Barry, Deming, & Lochman, 2008; Piatigorsky & Hinshaw, 2004) and exhibit lower social competence (Barry et al., 2008). Gaining more knowledge on social functioning problems in this group is important for several reasons. First, problematic social functioning (e.g. low social standing, low social problem solving skills, poor perspective taking skill) is associated with behavioral problems and delinquency both concurrently and prospectively (Hoglund, Lalonde, & Leadbeater, 2008; Lochman & Lampron, 1986; Lochman & Wayland, 1994; Lochman, Wayland, & White, 1993; Pardini, Barry, Barth, Lochman, & Wells, 2006), and can ensnare children in a persistent pattern of antisocial behavior (Moffitt, 1993, 1996; Parker & Asher, 1987). This is of particular importance for children with psychopathic traits as these characteristics already place an individual at greater risk for an antisocial development (for a review see Frick & Dickens, 2006). Indeed, preliminary evidence suggests that problematic social functioning influences the severity of psychopathic traits (i.e., lower social competence predicted higher persistence over a period of 2 years; Barry et al., 2008). Second, as psychopathic

traits have been shown to be relatively stable personality traits, even in young children, (Barry et al., 2008; Dadds, Fraser, Frost, & Hawes, 2005; Frick, Kimonis, Dandreaux, & Farell, 2003; Obradóvic, Pardini, Long, & Loeber, 2007) they are probably difficult to alter. An alternative approach may be to act on the secondary social and behavioral consequences of psychopathic traits to prevent them from interacting with these traits to worsen the prospects of these children. These types of interventions, focusing on peer-relations, social emotional functioning, or social cognitions are already available for children (e.g. Greenberg, Kusche, & Mihalic, 1998; Lochman & Wells, 2002). In conclusion, social functioning in children with psychopathic traits is of potential importance, but the current knowledge base is highly limited. Therefore, the present study seeks to expand on previous findings by exploring the relationship between psychopathic traits in children and a range of social functioning variables: social emotions, social goals and social status.

Social emotions

Empathy has been described as the emotion leading individuals to understand and share in another's emotional state or situation (Cohen & Strayer, 1996; Eisenberg & Miller, 1987). It plays a pivotal role in the development of interpersonal relationships and thereby a child's ability to function socially (Hunter, 2004) and is consequentially described by some as 'the social emotion' (Caselman, 2007). A lack of empathy in children is thus likely to be related to problematic social functioning, and indeed, several studies in children have demonstrated a link between low empathy and behavioral problems, such as higher levels of aggression and antisocial behavior (Miller & Eisenberg, 1988; Strayer & Roberts, 2004). A lack of empathy has traditionally been associated with psychopathy in adults (Cleckley, 1941). Likewise, in children, several experimental studies have shown psychopathic traits to be related to lower empathy (i.e. a lower recognition of and psycho-physiological reaction to signs of distress in others; (Blair, 1999; Blair, Budhani, Colledge, & Scott, 2005; Blair & Coles, 2000; Blair, Colledge, Murray, & Mitchell, 2001; Stevens, Charman, & Blair, 2001). Much of the theoretical and empirical work on the relationship between psychopathic traits and empathy in youth has focused on 'affective empathy' (feeling others' emotions) versus 'cognitive empathy' (understanding others' emotions or perspective taking ability, often equated with Theory of Mind). Children with psychopathic traits are hypothesized to lack affective empathy but not cognitive empathy (Blair, 2005). Within the empathy literature (e.g. Eisenberg, 2000; Hoffman, 2000), however, the broad inclusive concept of 'affective empathy' is commonly apportioned into sub-constructs: empathic concern or sympathy (experiencing warm compassionate feelings toward people in distress), personal distress (self-oriented feelings of anxiety and distress resulting from observing another's negative experiences) and emotion contagion (the involuntary experience of another person's painful emotional state). Importantly,

these affective empathy sub-constructs have been shown to relate differentially to behavioral problems (Eisenberg, 2000; Miller & Eisenberg, 1988). No studies on the relation between empathy and psychopathy in children have incorporated this division, but one study in adolescents, did indeed show different dimensions of psychopathy to be differentially related to different forms of affective empathy. Using a somewhat dated two factor solution of the APSD psychopathy measure (Frick & Hare, 2001), the affective Callous-Unemotional (CU), dimension was negatively related to empathic concern and personal distress, while the interpersonal and behavioral Impulsive/ Conduct Problems (I/CP) dimension was not related to empathic concern and was positively related to personal distress (Pardini, Lochman, & Frick, 2003). Therefore, the relationship between affective empathy and psychopathy has been established in youth but is in need of refinement.

With respect to cognitive empathy, as mentioned, children with higher psychopathic traits are not hypothesized to show reduced levels of this ability (Blair, 2005). To our knowledge, no empirical work in children supporting this notion currently exists, but studies in adolescents suggest that, in fact, youth with high psychopathic traits may show lower cognitive empathy abilities (Hogan, 1969; Jurkovic & Prentice, 1977; Pardini et al., 2003). It should, however, be noted that these studies employed out-of-date measures of psychopathy (Jurkovic & Prentice, 1977) or empathy (Hogan, 1969) or used an empathy measure (IRI; Davis, 1980) in which we feel cognitive empathy is contaminated with motivational (i.e. affective) components (e.g. "*I try to look at everybody's side of a disagreement before I make a decision"* as an item reflecting cognitive empathy) (Pardini et al., 2003). Hence, like with affective empathy, the nature of the relationship between psychopathic traits and cognitive empathy in children is need of further empirical investigation.

Social Goals

Social goals motivate children's behaviors because behavioral strategies are, in part, generated, evaluated and selected, on the basis of the desired end state for self in relation to peers (i.e., social goal; Crick & Dodge, 1994). No studies have investigated the types of social goals children with higher psychopathic traits endorse. However, studies in other child samples (e.g., Erdley & Asher, 1996; Renshaw & Asher, 1983) suggest that social motivational factors (i.e., social goals) play an important part in social adjustment and problematic behaviors. Aggressive children, for example, endorse more antisocial goals than their nonaggressive peers (Erdley & Asher, 1996; Lochman et al., 1993), and proactively aggressive children tend to select instrumental/ egocentric over relational goals in conflict situations more often than their nonaggressive peers (Crick & Dodge, 1996). Narcissistic children have been shown to endorse agentic social goals (i.e., goals that reflect the aim to be admired and respected by others and having control over peer-group activities) rather than communal social

goals (goals encompassing the aim for closeness with others) (Thomaes, Stegge, Olthof, Bushman, & Denissen, 2008). As manipulation and egocentricity are components of psychopathy, we expect children with higher levels of psychopathic traits to show lower communal goals, higher agentic goals, and when showing prosocial behavior to others, to do so with an egocentric but not an altruistic motivation. We expect this choice of goals to be related primarily to the Callous-Unemotional and Grandiose-Manipulative dimensions of psychopathy.

Social status

As mentioned earlier, two studies have been conducted on the social status of children with psychopathic traits. Piatorsky and Hinshaw (2004) found that psychopathic traits (measured through an expert-derived psychopathy profile of the California Child Q-set; CCQ) in boys with attention deficit/hyperactivity disorder (ADHD) problems predicted peer rejection above and beyond known diagnostic and behavioral risk-factors. This rejection could not be explained by the annoyance generated by the hyperactive and impulsive behavior patterns resulting from the ADHD in these boys. Barry and colleagues (2008) found similar results in a sample of aggressive children. Social preference (a combined score of rejection and popularity ratings) was negatively related to all three dimensions of psychopathy (i.e., Callous-Unemotional traits, Narcissism, and Impulsivity/Conduct Problems) of the APSD (Frick & Hare, 2001) both concurrently and prospectively (2 years). Additionally, peer-rated social preference moderated change from Time 1 to Time 3 Impulsivity/Conduct Problems in that lower social preference was related to higher persistence of these behaviors. These findings are in line with a recent finding in adults showing that psychopathy negatively predicts future life success in terms of status and wealth but also in terms of social relationships (Ullrich, Farrington, & Coid, 2007). We thus expect all psychopathic trait dimensions in our sample to be related to lower social status.

Conclusion

To sum up, preliminary evidence shows psychopathic traits in children to be related to problematic social functioning, and there is some indication that this problematic social functioning may even exacerbate their traits. There is also evidence from the child psychopathy literature, paralleled by findings in the adult and adolescent psychopathy literature and general developmental psychology, to suspect that the different dimensions of psychopathy in children relate differentially to various aspects of social functioning. Previous studies investigating this relationship, though ground setting, have studies only a narrow range of social functioning variables and had a limited focus on the differential relationship of the different psychopathy factors to social functioning. Furthermore, they have investigated only high-risk and no community children, and have used third party ratings of psychopathic traits only. The

scope of the current study is therefore to further this potentially important line of research. We do this by investigating the relationship between the different dimensions of self-reported psychopathy and social functioning variables of peer popularity and rejection, various social goals and a comprehensive range of empathy dimensions.

Method

Participants

Participants were 669 children (47% boys) from 17 primary schools in the Netherlands (*M* age=11.62 years, *SD*=0.64; range 9.64–12.96). Parental consent rate was 97%. Most children (80%) were Caucasian, 20% had other (e.g., Surinam/Lesser Antilles, North African) or mixed ethnical/cultural origins.

Procedure

The children completed their questionnaires in two one hour sessions during regular school time. It was pointed out to all participants that the results would remain confidential and that neither parents nor teachers would be informed of their individual answers. Children received a small gift (e.g., markers) in exchange for their participation.

Measures

Youth Psychopathic traits Inventory – Short Child Version (YPI-SCV) – The Youth Psychopathic trait Inventory- Child Version YPI-CV (Van Baardewijk et al., 2008) is an age-appropriate adaptation of the adolescent Youth Psychopathic traits Inventory (YPI; (Andershed, Kerr, Stattin, & Levander, 2002) that matches the cognitive, emotional, and verbal development and social realities of 9–12 year olds. Consistent with the adult and youth psychopathy literature, boys scored higher than girls, and scores were moderately to highly stable over 2-month and 6-month periods (total score ICCs of .77 and .76, respectively) and at 18 months (ICC =.73; (Van Baardewijk et al., submitted). With respect to the validity of the instrument, the three dimensions were found to be uniquely related to conceptually similar measures: narcissism was uniquely related to the Grandiose-Manipulative dimension, (affective) empathy inversely to the Callous-Unemotional dimension, and impulsivity/hyperactivity/inattention to the Impulsive-Irresponsible dimension (Van Baardewijk et al., 2008). Additionally, higher scores on the YPI-CV have been shown to be related to aggression in an experimental procedure (volume of noise blasts delivered to another child; β=.43; Van Baardewijk, Stegge, Bushman, & Vermeiren, 2008) and prospectively to self-reported aggression and peer-, and teacher-reported conduct problems and proactive aggression 18 months after baseline assessment (*r*=.36 to .46; Van Baardewijk et al., submitted).

Recently, paralleling the adolescent YPI, a short version of the 50-item YPI-CV was developed, encompassing 18 items (Van Baardewijk, Stegge, Andershed et al., in press). A comprehensible three factor structure identical to the original YPI-CV was demonstrated for this short measure, which was cross-validated in an independent sample (CFI=.97, RMSEA=.038). Results were similar for boys and girls. The short instrument showed good reliability (Cronbach's alpha=.83) and covered all core characteristics of the psychopathic personality construct. The short version showed high convergence with the original long instrument (r=.93) and similar correlations to an external criterion measure of conduct problems. Therefore, it was concluded that the abbreviated version, which was named the Youth Psychopathic trait Inventory-Short Child Version, is a practical and valid alternative for the original YPI-CV when administration time is limited.

Each item in the YPI-SCV is scored on a four-point Likert-type response scale ranging from *Does not apply at all* to *Applies very well*. Sample items are: "I think that crying is weak, even if no one sees you." and "When other people have problems, it is usually their own fault and that's why you should not help them."

Interpersonal Reactivity Index (IRI) – To assess different components of empathy, we adapted the Interpersonal Reactivity Index which was originally developed for adults by Davis (1980) but has also been used in adolescents (e.g. Pardini et al., 2003). The items of the original measure are organized into four subscales that measure four components of empathy (Perspective Taking, Fantasy, Empathic Concern and Personal Distress). The Perspective Taking (PT) subscale assesses attempts and willingness to adopt other people's perspective and see things from their point of view. It resembles cognitive empathy, but also has a motivational component. Fantasy (FS) measures the tendency to identify with characters in movies, books and other fictional situations. Empathic Concern (EC) pertains to experiencing warm compassionate feelings toward people in distress. Empathic concern is sometimes also referred to as 'sympathy' (Hunter, 2004; Eisenberg 2000). Personal Distress (PD), measures self-oriented feelings of anxiety and distress resulting from observing another's negative experiences.

To adapt the IRI for this study, we reworded some of the items for usage in 9–12 year old children without essentially affecting their content. We tested this adaptation in a school based pilot study (n= 401, 53% boys, M=11.3, SD=.7). Principal components analysis revealed four theoretically comprehensible subscales explaining 47% of the variance. These subscales were named Perspective Taking, Fantasy, Empathic Concern and Personal Distress, identical to the original IRI subscales. Each scale had six items. Cronbach's alphas ranged from .64 to .81.

Sample items: "When I watch a good movie, I sometimes feel like I am one of the characters" (Fantasy). "If I see someone in pain, I get upset" (Personal Distress),

"I sometimes don't feel very sorry for someone who get's treated unfairly" (Empathic Concern/Sympathy), "Before telling someone that I don't like something about them, I try to imagine how I would feel if someone told me that." (Perspective Taking)

Fantasy is not regarded as a component of empathy by most theorists (Eisenberg, 2000; Hoffman, 2000), and therefore this subscale is often not discussed in empathy studies (e.g. Pardini et al., 2003). This will also be the case in the current study.

Cognitive and Affective Empathy Scales (CAES) – Empathy was further assessed using the Cognitive and Affective Empathy Scales (CAES) which was developed for the current study. The CAES measures two components of empathy: Emotion Contagion and Cognitive Empathy. According to (Hoffman, 1975) emotion contagion (also referred to as empathic distress, empathic sadness or empathy) is the involuntary experience of another person's painful emotional state. Emotion contagion is a very basic form of affective empathy which can already be seen in infants (e.g., reactive crying). Items for the Emotion Contagion scale were taken from Bryant's Index of Empathy (Bryant, 1982). Cognitive empathy measured in the CAES can be compared to the Perspective Taking (PT) scale of the IRI (Davis, 1980). However, whereas the PT scale measures the *willingness and motivation* to take on another person's point of view (e.g. "I try to look at everybody's side of a disagreement before I make a decision"), the CAES Cognitive Empathy scale intends to measure 'pure' cognitive empathy skills uncontaminated by motivation (e.g., "I often find it difficult to realize how someone else is feeling").

We tested this measure in a school based pilot study (n= 401, 53% boys, M=11.3, SD=.7). Principal components analyses of an item-pool resulted in the two scales, Cognitive empathy (5 items, Cronbach's alpha=.80) and Emotion contagion (7 items, Cronbach's alpha=.88).

Sample items: "I often find it difficult to realize how someone else is feeling" (Cognitive Empathy, reversed) and "I feel sad when other children are sad or in trouble" (Emotion Contagion).

The Interpersonal Goals Inventory – Child (IGI-C; Ojanen, Gronroos, & Salmivalli, 2005) The IGI-C is based on the Circumplex scales of the Interpersonal Values measure (CSIV; Locke, 2000). Interpersonal dispositions in this circumplex can be conceptualized along eight scales, which represent different blends of agentic (reflecting the aim for assertiveness and admiration) and communal (reflecting the aim for closeness with others) goals. In the current study only the two higher order scales (agentic and communal, respectively) will be discussed. Cronbach's alpha of the two higher order scales were .83 and .79, respectively.

Sample items: When with other children, how important is it for you that the others respect and admire you" (Agentic). When with other children, how important is it

for you that you can put the others in a good mood" (Communal). Children evaluated each item using Likert scale like ratings ranging from 0 (*not important for me at all*) to 3 (*very important to me*).

Prosocial goals – To measure prosocial goals, we developed a instrument measuring five different types of motivations for performing prosocial behaviors (4 items each), based on Carlo & Randall (2002). These motivations were 'moral norms' (sample item: "I do kind things for others because I believe that you should help others"), 'need of others' (sample item: "I do kind things for others when I see someone needs it"), 'making an effort' (sample item: "I do kind things for others even when I have to make an effort"), 'tit for tat' (sample item: "I do kind things for others so I can ask them for something later, as well") *and 'public'* (sample item: "I do kind things for others so I'll make a good impression"). Participants were asked to rate the extent to which statements described themselves on a 5-point scale ranging from 0 (*completely not true*) to 5 (*completely true*). Principal component analyses revealed a two factor solution explaining 52% of the variance. The two factors were named Altruistic motivation (comprising items reflecting 'moral norms', 'need of others' and 'making an effort', 12 items; Cronbach's alpha was .87) and Egocentric motivation (comprising items reflecting 'tit for tat' and 'public'; 8 items; Cronbach's alpha was .72).

Peer popularity and peer rejection – Sociometric status was assessed by asking children to write down the names of up to five classmates they liked most and up to five classmates they liked least. Children were provided with a list of all classmates as a reminder. Participants were instructed not to include themselves. The number of liked-most and liked-least nominations were calculated for each child and standardized within classes to control for class size, creating measures of 'popularity' and 'rejection'. Alternatively, some authors combine popularity and rejection scores into one 'social status' variable by subtracting standardized rejection score from the popularity score. To allow for comparison with different studies, this social status variable was also computed in the current study. This method of obtaining peer social preference has been used in other studies (e.g., Boivin & Begin, 1989; Hughes, Cavell, & Grossman, 1997).

Results

Descriptives

Descriptive statistics for all study variables are presented in Table 1. Boys scored higher on psychopathic traits, agentic social goals, and peer-reported rejection. Girls scored higher on all empathy components, communal social goals, and egocentric and altruistic prosocial goals. Boys thus generally showed more problematic social functioning.

Table 1 Descriptive statistics for all study variables and gender differences

	N	Mean	*SD*	Minimum	Maximum	Correlation with gender (boys=1, girls=0)
YPI-SCV psychopathy total score	640	.78	.37	.00	2.22	.30***
YPI- SCV Callous-Unemotional (CU)	640	.60	.51	.00	2.67	.37***
YPI-SCV Grandiose Manipulative (GM)	640	.60	.49	.00	3.00	.20***
YPI-SCV Impulsive Irresponsible (II)	640	1.13	.51	.00	2.67	.11**
IRI Personal Distress (PD)	640	1.19	.78	.00	4.00	–.24***
IRI Empathic Concern (EC)	640	2.59	.70	.00	4.00	–.33***
IRI Perspective Taking (PT)	640	2.22	.72	.00	4.00	–.27***
CAES Emotion Contagion	648	1.90	.88	.00	4.00	–.35***
CAES Cognitive Empathy	648	2.16	.69	.00	4.00	–.17***
IGI-C Agentic	635	–1.27	1.05	–5.08	2.95	.08*
IGI-C Communal	630	2.10	1.20	–2.20	5.36	–.20***
Prosocial goals: altruistic	639	2.72	.68	.00	4.00	–.27*
Prosocial goals: egocentric	646	2.09	.72	.13	4.00	–.14*
Peers popular (standardized)	664	–.01	–.97	–1.54	4.58	.03
Peers rejection (standardized)	664	–.01	–.99	–.83	6.19	.20***
Social status (combined popularity/rejection score)	664	.01	1.59	–5.91	4.88	–.13*

Note: YPI-SCV = Youth Psychopathic traits Inventory – Short Child Version, IRI= Interpersonal Reactivity Index; CAES = Cognitive and Affective Empathy Scales, IGI-C = The Interpersonal Goals Inventory for Children *** correlation is significant at the 0.001 level (2-tailed), ** correlation is significant at the 0.01 level (2-tailed), * correlation is significant at the 0.05 level (2-tailed).

Regression analyses

A series of regression analyses were performed to investigate the unique relationship between the different dimensions of psychopathy and social functioning variables (Table 2). Analyses involving one of the YPI-SCV dimensions were controlled for the effect of the other two dimensions. All significant relationships remained after controlling for age and gender. With respect to social emotions, the Callous-Unemotional dimension was negatively related to all components of empathy. The Impulsive-Irresponsible dimension was marginally positively related to personal distress but negatively to both conceptualizations of cognitive empathy. Finally, the Grandiose-Manipulative dimension was not related to any of the empathy components, with one exception: scores on this dimension were related to higher reported levels of cognitive empathy.

With respect to social goals, we found the Callous-Unemotional dimension to be negatively associated with the desire for closeness with others (Communal Goals) and the tendency to act prosocially for altruistic reasons (Altruistic Goals). Both the

Table 2. Regression analyses showing the unique relationship between the different dimensions of psychopathy and social functioning variables

	YPI-SCV Callous-Unemotional (CU)			YPI-SCV Grandiose-Manipulative (GM)			YPI-SCV Impulsive-Irresponsible (II)			R^2
	B	*SE B*	β	*B*	*SE B*	β	*B*	*SE B*	β	
Social emotions										
IRI Personal Distress (PD)	−.37	.07	−.24***	.09	.07	.06	.14	.06	.09*	.05
IRI Empathic Concern (EC)	−.62	.05	−.46***	.02	.06	.02	−.09	.05	−.07	.22
IRI Perspective Taking (PT)	−.30	.06	−.21***	.11	.06	.08	−.20	.06	−.14**	.07
CAES Emotion Contagion	−.60	.07	−.35***	.04	.08	.02	−.01	.07	−.00	.12
CAES Cognitive Empathy	−.22	.06	−.16***	.20	.06	.14**	−.15	.06	−.11*	.04
Social Goals										
IGI-C Agentic	.15	.09	.07	.43	.09	.20***	−.21	.09	−.10*	.05
IGI-C Communal	−.59	.10	−.25***	−.08	.11	−.03	−.02	.10	−.01	.07
Prosocial goals: altruistic	−.44	.06	−.33***	−.05	.06	−.03	.03	.06	.02	.12
Prosocial goals: egocentric	.19	.06	.14**	.27	.06	.18***	.02	.06	.02	.08
Social status										
Peers popular (standardized)	−.12	.08	−.06	−.08	.09	−.04	−.19	.08	−.10*	.02
Peers rejection (standardized)	.35	.08	.18***	−.02	.09	−.01	.27	.08	.14**	.06
Social status (combined popularity/rejection score)	−.48	.13	−.15***	−.07	.14	−.02	−.44	.13	−.14**	.06

Note: YPI-SCV = Youth Psychopathic traits Inventory – Short Child Version, IRI= Interpersonal Reactivity Index; CAES = Cognitive and Affective Empathy Scales, IGI-C = The Interpersonal Goals Inventory for Children *** regression coefficient is significant at the 0.001 level (2-tailed), ** regression coefficient is significant at the 0.01 level (2-tailed), * regression coefficient is significant at he 0.05 level (2-tailed).

Callous-Unemotional and Grandiose-Manipulative dimensions were positively related to egocentric motivations to perform prosocial behaviors (Egocentric Goals). The Grandiose-Manipulative dimension was also positively related to the aim to be admired and respected by others, and having control over peer-group activities (Agentic goals). Few significant relationships between the Impulsive-Irresponsible dimension and social goals were found. This dimension was only marginally negatively related to Agentic goal choice. Finally, with respect to social status, children with high Callous-Unemotional traits were both rejected by their peers and also slightly less often picked as the nicest kid or most fun to be with (Popularity). The Impulsive-Irresponsible dimension was related to being rejected but not to being popular. When combining popularity and rejection variables into one social status variable, both the Callous-Unemotional and the Impulsive-Irresponsible dimension were found to be negatively related to social status, as was to be expected from the individual status variables. No relation between the Grandiose-Manipulative and social status variables were found.

Discussion

This study investigated the relation between psychopathic traits and social functioning in preadolescent children. Previous studies had shown that children with high levels of psychopathic traits are not well liked by their peers (Barry et al., 2008; Piatirosky & Hinshaw, 2004) and exhibit lower social competence (Barry et al., 2008). The current study sought to expand on these preliminary findings by investigating the relationship between the different dimensions of self-reported psychopathy in preadolescent children and a broad array of social functioning variables: a comprehensive range of empathy dimensions, various social goals, and social status variables. As expected, the general finding was that psychopathic traits were negatively related to social functioning, though the relations were generally modest in size and the explained variance was low to moderate in size. Also consistent with the hypothesis was that the results varied between the three dimensions of psychopathy, with the Callous-Unemotional dimension showing the most consistent negative relation.

Social Emotions (Empathy) – With respect to the social emotion of empathy, the Callous-Unemotional dimension was consistently negatively related to all subtypes of empathy (i.e., personal distress, empathic concern or sympathy, emotion contagion and both operationalizations of cognitive empathy). The Impulsive-Irresponsible dimension was negatively related to both scales measuring cognitive empathy, and it was marginally positively related to personal distress. The Grandiose-Manipulative dimension showed no relation to any form of empathy, except for a positive relation to cognitive empathy but only as measured through the CAES Cognitive Empathy scale (but not through the IRI-perspective taking skill). This last finding may be an artifact of an instrument-trait interaction rather than reflecting an actual relationship. A favorable attribute of the CAES Cognitive Empathy scale, opposed to the analogous IRI-Perspective Taking scale, is that it measures cognitive empathy as a cognitive ability, uncontaminated by motivational factors that may bear resemblance to affective empathy. Many items are worded: "I have the ability to… " or "I can …" rather than "I try to.". The positive answers that children with high grandiose-manipulative traits gave may have reflected their sense of grandiosity, rather than actual higher levels of cognitive empathy. Alternatively, the differential relation to both operationalizations may indicate that grandiose-manipulative traits in children are not linked to a lack of ability but rather to a lack of effort or concern to take other's perspective ("I can take another's perspective, I just choose not to try too").

Our results with respect to empathy show some similarity to previous findings. The overall negative association between psychopathic traits and empathy fits the description of psychopathy as comprising a lack of empathy and experimental studies that have linked psychopathic traits in children to lower sensitivity to others' distress (Blair, 1999; Blair et al., 2001; 2005; Blair & Coles, 2000; Stevens et al., 2001). The differential relationships of callous-unemotional traits and impulsive-irresponsible traits

to personal distress are generally in line with earlier findings using the two factor structure of the APSD in incarcerated adolescents in which the Callous-Unemotional (CU) factor was negatively related to personal distress, whereas the Impulsive/Conduct problems dimension (I/CP) was positively related to this subtype of empathy (Pardini et al., 2003). Because personal distress is an aversive affective reaction to the apprehension of another's discomfort (e.g., feeling anxious when seeing another being sad; Eisenberg, 2000) the current finding also bears resemblance to the finding that in referred children, the I/CP factor was related to higher anxiety, whereas the CU factor was related to lower anxiety (Frick, Lilienfeld, Ellis, Loney, & Silverthorn, 1999). It should be noted that despite being a subtype of empathy, self-oriented personal distress is generally *negatively* associated with prosocial behavior (Eisenberg, 2000), and therefore, the (marginally) positive relation to the Impulsive-Irresponsible dimension is not indicative of more prosocial behavior.

Another noticeable finding with respect to empathy is that Callous-Unemotional and Impulsive-Irresponsible dimensions of psychopathy were both negatively related to cognitive empathy, which held for both conceptualizations of cognitive empathy. This finding does not support the hypothesis put forward elsewhere (Blair, 2005) that children with psychopathic traits are not impaired in their perspective taking abilities, but it is consistent with indicators from research in adolescents (Jurkovic & Prentice, 1977; Hogan, 1969; Pardini et al., 2003).

Social goals – With respect to social goals, it was expected that children with higher psychopathic traits would show lower communal goals, higher agentic goals and when showing prosocial behavior to others, would do so with an egocentric/instrumental but not an altruistic motivation. This choice of social goals was expected to relate primarily to the affective Callous-Unemotional and interpersonal Grandiose-Manipulative dimensions of psychopathy. The results confirmed these hypotheses; children with high affective and interpersonal psychopathic traits felt a low need for intimacy and affiliation with others but rather strived to be admired and to dominate. When acting prosocially (i.e., being kind to other children), they reported doing so not for altruistic reasons but rather egocentrically and instrumentally (e.g., to make a good impression on others). No research has been done on social goal choice in children with psychopathic traits, but in young adults, there have been comparable findings. Specifically, psychopathic traits were negatively associated with a need for affiliation and social closeness (Braid, 2001). Our findings also show some similarity to a study in which children with high narcissistic traits scored high on agentic and low on communal goals (Thomaes et al., 2008). Importantly, it has been shown that certain social goals can result in problematic functioning. Specifically, the same pattern of high agentic and low communal goals that we see in the children with high affective and interpersonal psychopathic traits in our sample has been shown to be negatively related to prosocial behavior and positively to proactive aggression

(Salmivalli, Ojanen, Haanpaa, & Peets, 2005). Other studies in children have also linked high agentic goals to aggression (Ojanen et al., 2005) and bullying (Sijtsema, Veenstra, Lindenberg, & Salmivalli, 2009).

Social status – Previous research had shown psychopathic traits to be related to lower overall social status (Barry et al., 2008) and to higher peer-rejection but not to lower peer-popularity (Piatorsky & Hinshaw, 2004). The results of the current study largely replicated these earlier findings, showing that children with psychopathic traits are not well-liked by their peers. In our study, children with higher impulsive-irresponsible psychopathic traits were less popular than those with lower traits, and they were also more often rejected (chosen as least liked by their classmates). Children with higher callous-unemotional traits were also more often rejected. When combining rejected and popularity scores into one social status variable, both these dimensions were related to lower social status.

The current study thus showed that children with high psychopathic traits suffer from impaired social functioning both emotionally (affective empathy), motivationally (social goals), and interpersonally (social status). This is worrisome as each of these social functioning variables has been linked to problematic functioning such as higher behavioral problems, aggression and delinquency (Hoglund et al., 2008; Lochman & Lampron, 1986; Lochman & Wayland, 1994; Miller & Eisenberg, 1998; Pardini et al., 2006; Salmivalli et al., 2005). Additionally, there is even some preliminary evidence that suggests that lower social functioning may worsen the perspective of children with high psychopathic traits (i.e., result in higher persistence of psychopathic traits over time; Barry et al., 2008).

However, it should be noted that due to the cross-sectional nature of the current study, questions regarding causality cannot be answered. Moreover, the interaction between psychopathic traits, social functioning variables, and problematic social behaviors (not measured in this study) is probably complex. For example, relational aggression and social status reciprocally influence each other (Puckett, Aikins, & Cillessen, 2008). Low peer status has been shown to result in higher aggression (Cillessen & Mayeux, 2004), but this has also been demonstrated in the reverse direction (Newcomb, Bukowski, & Pattee, 1993). Likewise, indirect mediational relations between social functioning and behaviors have been shown as well. Behaviors such as aggression and prosocial behavior mediated the relation between social goals (communal and agentic) and peer status (Ojanen et al., 2005). Future studies could investigate if and how exactly these constructs relate and interact and consequentially find ways to break this cycle. For example, one could aim at the social emotions: it has repeatedly been suggested that parental empathy inducing techniques that foster empathic concern in young children could be effective in countering psychopathic traits (Frick & White, 2006; Van Baardewijk et al, 2009). Alternatively, social skills (e.g. Greenberg et al., 1998) or perspective taking abilities (e.g. Grizenko et al., 2000) could be targeted.

Limitations

The current study should be seen in the light of a number of limitations. First, the YPI-CV and YPI-SCV have currently only been tested in community samples and it is a, yet unanswered, empirical question whether it can be used successfully in other aggressive, adjudicated or high-risk children. However, in juvenile psychopathy research, studies in community samples have generally rendered similar results to those in high-risk or adjudicated samples (Kotler & McMahon, 2005). Specifically, the highly similar adolescent equivalent of the YPI-CV, the YPI (Andershed et al., 2002), has been shown to be reliable and valid in community samples as well as high-risk and adjudicated groups (Andershed, Hodgins, & Tengstrom, 2007; Andershed et al., 2002; Dolan & Rennie, 2006; 2007; Larsson et al., 2006; 2007; Poythress, Dembo, Wareham, & Greenbaum, 2006; Skeem & Cauffman, 2003). Despite these positive indications, the validity of the YPI-SCV in other samples will need to be formally substantiated in future studies. Second, the current study only supports the reliability and validity of self-reported psychopathic traits in a research situation. No conclusion can be drawn from the current research on the utility of the YPI-SCV when anonymity cannot be guaranteed (i.e. clinical practice). Third, the current study relied primarily on self-report questionnaires which could have created method variance problems. In future studies, it would be valuable to use a wider range of informants (self, peers, teachers, parents) and methods (e.g. laboratory paradigms). Fourth, with respect to social goals we focused on children's global goal orientations, indicative of a general representation, or a 'working model', for their behaviors. It should be noted that this does not preclude the possibility that social goals vary according to cues provided by interaction partners or situations. The same holds for empathy. We focused on dispositional empathy, rather than situational empathic responding which may be closer to actual behaviors. Future studies could examine children's goals and empathic responding in different social situations.

The present studies showed children with high psychopathic traits to suffer from a wide range of impaired social functioning: emotionally (empathy), motivationally (social goals), and interpersonally (social status). This is worrisome, as problematic social functioning, like psychopathy, is associated with negative outcomes and there are indications that the two can interact to worsen children's perspective. Therefore, future studies should continue to investigate if and how exactly psychopathic traits and social functioning relate and interact and consequentially find ways to break this negative cycle.

6

Psychopathic traits, victim distress and aggression in children

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6. Psychopathic traits, victim distress and aggression in children

Abstract

The relationship between psychopathic traits and aggression in children may be explained by their reduced sensitivity to signs of distress in others. Emotional cues such as fear and sadness function to make the perpetrator aware of the victim's distress and supposedly inhibit aggression. As children high in psychopathic traits show a reduced sensitivity to others' distress, these important interpersonal signals cannot perform their aggression inhibiting function. The present experiment tested the hypothesis that aggression in children with psychopathic traits can be attenuated by making distress cues more salient. *n*=224 participants from the community (53% boys, *M* age=10.81 years, *SD*=0.92) played a computer-based competitive reaction-time game against a simulated opponent by blasting him or her with loud noise through a headphone. The salience of the opponent's distress was increased for half of the participants (randomly selected) by a written message expressing his or her fear. Psychopathic traits were assessed using the Youth Psychopathic traits Inventory – Child Version (Van Baardewijk, Stegge, Andershed, Thomaes, Scholte, & Vermeiren, 2008). As expected, regression analysis showed that psychopathic traits were strongly related to aggression in the no distress condition but not in the distress condition. Thus, the relation between psychopathic traits and aggression depended upon the salience of the opponent's distress. It was concluded that children with psychopathic traits are indeed prone to act aggressively, but also that this aggression is dynamic and is dependent upon circumstances. Their aggression can be attenuated by a salient display of others' distress. These results suggest that empathy based treatment techniques may reduce aggression in children with psychopathic traits.

Introduction

Aggressive behavior is a serious problem in today's society. Longitudinal studies have shown that adolescent and adult aggressive and violent behavior are rooted in childhood (Farrington, 1994; Loeber, 1982). Targeting childhood aggression will therefore likely reduce aggression at a later age (Tremblay, 1998). Thus, high priority should be given to understanding the mechanisms underlying childhood aggression, with a particular emphasis on subgroups of children with an increased risk for lifelong aggression problems, such as those with psychopathic traits. Previous research has shown psychopathic traits in children to be strongly associated with aggression in both clinical and community samples (Dadds, Fraser, Frost, & Hawes, 2005; Frick, Cornell, Barry, Bodin, & Dane, 2003; Frick, O'Brien, Wootton, & McBurnett, 1994; Marsee, Silverthorn, & Frick, 2005). Although highly valuable in several respects, past

research has not provided insight into the mechanisms underlying the high incidence of aggression in children with psychopathic traits. Aggressive behavior is the result of an interaction of personality traits and circumstances (Bettencourt, Talley, Benjamin, & Valentine, 2006). Although it is now well accepted that psychopathic personality traits in children are related to high levels of aggression, the conditions under which aggressive acts are more, or less, likely to occur in this group have not yet been studied.

In this experimental study we propose one possible cause for the high incidence of aggression in children with psychopathic traits: their reduced sensitivity to cues of distress in others. We assessed the relationship between psychopathic traits and interpersonal aggression under two controlled conditions: one in which the salience of the victim's distress was intensified in order to increase the likelihood that this emotion cue is picked up by the participant (distress condition), and a control condition in which no information was given about the victim's distress (no distress condition).

The reduced sensitivity to signs of distress in others (i.e. fear and sadness) is a well-established empirical fact in psychopathic youth (Blair, Budhani, Colledge, & Scott, 2005; Blair & Coles, 2000; Blair, Colledge, Murray, & Mitchell, 2001; Stevens, Charman, & Blair, 2001). Although children with high psychopathic traits do not differ from other children in their ability to recognize happiness, anger or surprise, they have difficulty recognizing sadness and fear (Blair, 1999). This reduced sensitivity to distress may be the mechanism that explains the association between psychopathy and aggression. In interpersonal situations, the expression of sadness or fear provides perpetrators of aggressive acts instant feedback about the consequences of their actions. These emotional cues function to make the perpetrator aware of the victim's distress and supposedly inhibit aggressive acts (Blair, 1995). As children high in psychopathic traits show a reduced sensitivity to others' fear and sadness, they are more likely to miss these important interpersonal signals. As a consequence, these signals can not perform their inhibiting function, resulting in higher aggression levels.

An interesting question is whether aggression in children with psychopathic traits can be decreased by acting upon their reduced sensitivity to signs of distress. In one study (Blair et al., 2001), children were presented with a cinematic display of facial expressions that evolved through twenty stages from a neutral expression to an emotional expression. Children high in psychopathy needed significantly more stages, and thus a higher emotional intensity, to correctly identify fear and sadness than did children low in psychopathy. This finding suggests that enhancing the stimulus characteristics, i.e. making the victim's distress more intense or salient increases the likelihood that the distress cue is picked up by children high in psychopathic traits. The distress cue can then perform its aggression inhibiting task. The current study tests the hypothesis that confronting children high in psychopathic traits with more salient feelings of opponent's distress will decrease their level of aggression.

To test this hypothesis, we designed a procedure based on the Taylor Aggression Paradigm (Taylor, 1967). Children played a computer-based competitive reaction-time game against an unknown opponent under one of two different conditions. In the no distress condition, the participant was allowed to aggress against an ostensible opponent. In the distress condition, the participant was allowed to aggress as well but the salience of the opponent's distress was increased by a written message expressing his or her fear. In the no distress condition, we expected a positive relationship between psychopathy and aggression. Because we hypothesized aggression in children high in psychopathic traits to be inhibited by a salient expression of others' distress we expected no relationship between psychopathy and aggression in the distress condition.

Method

Participants

Participants were 228 children (53% boys) from four primary schools in the Netherlands (*M* age=10.81 years, *SD*=0.92). Parental consent rate was 76.8%. Most children (77%) were Caucasian, 23% had other (e.g., Surinam/Lesser Antilles, (North) African) or mixed ethical/cultural origins. Children received a small gift (e.g., markers) in exchange for their voluntary participation.

Measures

Youth Psychopathic trait Inventory – Child Version – The 50-item Youth Psychopathic trait Inventory – Child Version (YPI-CV; Van Baardewijk et al., 2008) was used to measure psychopathy. It assesses the three core dimensions of psychopathy: Grandiose-Manipulative, Callous-Unemotional and Impulsive-Irresponsible. The instrument is adapted from the original Youth Psychopathic trait Inventory intended for adolescents (YPI; Andershed, Kerr, Stattin, & Levander, 2002). The reliability and validity of the YPI has been confirmed in several studies in both community and adjudicated samples (Andershed, Hodgins, & Tengstrom, 2007; Larsson, Andershed, & Lichtenstein, 2006; Poythress, Dembo, Wareham, & Greenbaum, 2006; Skeem & Cauffman, 2003). The child version of the instrument was developed for use in 9 to 12 year olds and was investigated with regard to psychometric properties by Van Baardewijk et al. (2008). Cronbach's alpha of the total score was .92 and test-retest reliability coefficients over a period of 2 and 6 months were .77 and .76, respectively. Scores showed expected relations to theoretically relevant constructs such as teacher assessed psychopathy and behavioral problems, self-reported, peer-reported and situational empathy, self-reported narcissism and peer and teacher reported attention-deficit/hyperactivity/impulsivity problems. Items are scored using scales ranging from 1 (*does not apply at all*) to 4 (*applies very well*). Sample items include "Feeling bad when you have done something wrong is a waste of time.", "It's fun to make up stories and try to get

people to believe them", and "I find rules to be nothing but a nuisance". Participants completed the YPI-CV a few weeks before the experiment.

Procedure

Participants were told that they were to play a computer game that would help researchers understand how to help children with social problems. They were told that they could leave anytime and still would receive a gift. No children refused cooperation or expressed willingness to leave prematurely. After written participant assent was obtained, they completed an internet reaction time game called *FastKid!* (Thomaes, Bushman, Stegge, & Olthof, 2008) with an opponent of the same gender and grade from a different school. In reality, no opponent existed and the computer controlled all events. *Fastkid!* is based on the Taylor Aggression Paradigm (Taylor, 1967), which has been well validated in adults (e.g., Giancola & Zeichner, 1995). Recent studies have shown that this paradigm is also a valid measure of aggression in adolescents (Konijn, Nije Bijvank, & Bushman, 2007) and in children (Murphy, Pelham, & Lang, 1992; Thomaes et al., 2008; Waschbusch, Pelham, Jennings, Greiner, Tarter, & Moss, 2002).

Participants were told that *FastKid!* consisted of two 5-trial rounds, and each round had a bonus. The first round bonus was the ability to send a written message to the opponent at the end of the first round. The second round bonus was the ability to blast the opponent with noise through headphones after winning a trial during the second round. Through a rigged lottery, the opponent owned the bonus in the first round, whereas the participant owned the bonus in the second round. Participants were given samples of white noise (sounds like radio static) they could set for their opponent. The noise levels ranged from 55 decibels (dB) (level 1) to 100 dB (level 10), in 5 dB increments. The maximum noise level, 100 dB, is about the same intensity as a smoke or fire alarm. A non-aggressive no-noise setting (level 0) was also included. They were told that noise levels 7 and higher would hurt their opponent's ears.

By a flip of the coin each participant was assigned to either the distress or no distress conditions. All participants lost the first 5-trial round. After the first round, participants in the distress condition received a message from the opponent that expressed feelings of distress: "The first round was okay, but those noise blasts seem pretty loud. I'm pretty worried about them". Participants in the no distress condition also received a message from the opponent, but it did not express any distress: "The first round was okay. Are we halfway done already?? That's pretty quick." After the message was received and read, the second 5-trial round began. In this round, participants owned the "noise bonus," so they could blast their opponent with noise levels of choice after winning a trial. Prior to each of the five trials of round 2, participants set the noise level their opponent would receive if the opponent lost. After each trial, participants were informed whether they had won (i.e., trial 1, 2, 4,

and 5) or lost (i.e., trial 3) that trial. To obtain an aggression measure unconfounded by the effect of losing trial 3, the average level of noise set for the opponent across the first 3 trials was used to measure aggression. The alpha coefficient for the aggression measure was .84. Finally, participants were thoroughly debriefed to remove lingering effects of the manipulations.

Occasionally, aggression research is faulted for using laboratory procedures that are "artificial" or "unrepresentative" of "real-life" aggression. The validity of laboratory aggression procedures (including our noise blast procedure) has been established by results from two meta-analyses. One meta-analysis showed impressive levels of convergence across a wide range of laboratory aggression measures (Carlson, Marcus-Newhall, & Miller, 1989). The other meta-analysis showed that "real" and laboratory measures of aggression are influenced in similar ways by situational variables (e.g., alcohol, provocation) and by individual difference variables (e.g., trait aggressiveness, gender) (Anderson & Bushman, 1997).

Results

Preliminary Analyses

Equivalence of experimental conditions. As can be seen in Table 1, psychopathy scores, age, and gender did not differ between the children assigned to distress and neutral conditions, indicating that the random assignment to conditions was effective.

Table 1. Psychopathic traits (mean score on YPI-CV), gender and age for children in the distress and no distress conditions

		Distress (n=124) 54% boys		No distress (n=104) 52% boys		t-test
	Range	Mean	*SD*	Mean	*SD*	
Psychopathy score	1.02 – 2.42	1.63	0.36	1.60	0.37	$t(226)=0.52$, $p=.60$
Age	9.13 – 12.76	10.87	0.93	10.74	0.91	$t(226)=-1.13$; $p=.26$

Sex and age differences. As expected, boys were significantly more aggressive than girls, $F(1,226)=34.71$, $p<.0001$, $d=0.79$. However, no interactions involving gender were found. Data for boys and girls were therefore combined for subsequent analyses.

No main effects or interaction effects involving age were found. Data for different ages were also combined for subsequent analyses.

Primary Analyses

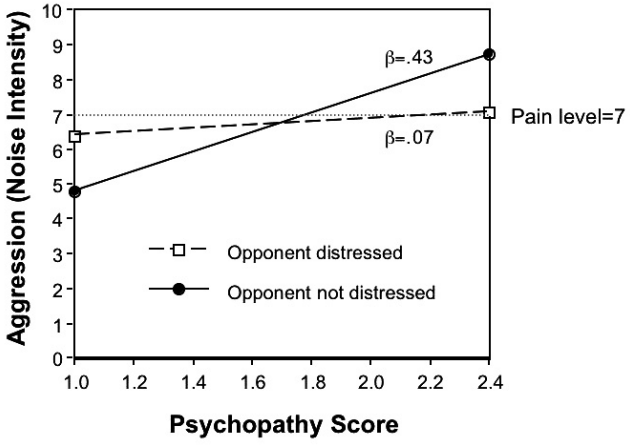
The data were analysed using hierarchical multiple regression analyses, with aggression (mean of first three noise blasts) as the dependent variable. Predictor variables were self-reported psychopathic traits (YPI; continuous), distress condition (discrete; no distress=0, distress=1), and their interaction (psychopathy × distress).

Self-reported psychopathic traits were centered to reduce multicollinearity (Aiken & West, 1991). The main effect of self-reported psychopathic traits and condition were entered in Step 1, and the interaction term was entered in Step 2.

The regression analyses yielded a significant main effect for psychopathy, $t(224)=4.61$, $p<.0001$, $b=.59$, $\beta=.24$. The higher the level of psychopathy, the higher the level of aggression. No significant main effect was found for distress condition, $t(224)=0.25$, $p=.80$, $b=.016$, $\beta=-.074$. Most important, there was a significant interaction between psychopathic traits and distress condition, $t(224)=-2.81$, $p<.005$, $b=-.89$, $\beta=-.26$ (see Figure 1). As expected, psychopathic traits were positively related to aggression in the no distress condition but not in the distress condition, $t(102)=4.84$, $p<.0001$, $b=2.78$, $\beta=.43$ and $t(122)=0.78$, $p=.44$, $b=.46$, $\beta=.071$, respectively. The model R^2 was .058 in Step 1, and .090 in Step 2, a significant R^2 change, $F(1, 224)=7.85$, $p=.006$). Maximum Cook's distances were .12 and .04 for the distress and control conditions, respectively. These values are well below the value that is considered cause for concern (>1, Cook & Weisberg, 1982), indicating that our regression models were not influenced by a small number of extreme cases.

When focusing on the extreme groups, similar results were found. 2 groups were created: high psychopathy (scoring >1 *SD* above the mean, $n=33$) and low psychopathy (scoring<1 SD below the mean, $n=31$). As expected, there was a significant main effect for psychopathy group. Children in the high psychopathy group were more aggressive than children in the low psychopathy group ($F(1,63)=12.85$, $p=.001$). No effect for condition was found ($F(1, 63)=0.25$, $p=.88$) but the interaction effect was significant ($F(1,63)=8.14$, $p=.006$). Simple effect analyses revealed that this interaction could chiefly be attributed to the high psychopathy group. In this group,

Figure 1 Relation between psychopathic traits and aggression for participants in either the no distress control condition or distress condition. The lines in the figure are regression lines. β=standardized regression coefficient.



children were significantly less aggressive in the distress condition (noise level M=6.91, SD=2.95) than in the no distress condition (noise level M=8.72, SD=1.48) (t(29.59)=2.31, p=.029). By contrast, in the low psychopathy group, the difference in aggression between conditions just failed to reach significance (t(29.00)=−2.01, p=.053). Children in the low psychopathy group were thus not significantly more aggressive in the distress condition (noise level M=6.48, SD=2.30) than in the no distress condition (noise level M=4.87, SD=2.15).

Discussion

In the current study, we hypothesized that aggression in children with psychopathic traits could be reduced if these children were made aware of the distress of others. Normally children high in psychopathic traits show low sensitivity to others' distress. To test this hypothesis we experimentally assessed the relationship between psychopathic traits and aggression in children under two controlled conditions, one in which no information was given about the feelings of the opponent and one in which the opponent's distress was made explicit. As expected, the relation between psychopathic traits and aggression differed in these two conditions. In the control condition, in which the opponent's feelings were not salient, children with higher psychopathic traits acted more aggressively against their victim, with children with the highest levels of psychopathic traits in our sample blasting at a volume that exceeded the pain level of the opponent. In the experimental condition, when the distress of the opponent was made salient, there was no relationship between psychopathy and aggression. Children high in psychopathic traits were lower in aggression and no different from their counterparts with low psychopathic traits.

These findings confirm the results from earlier studies that have found a relationship between psychopathic traits and aggression in children. Our findings also expand on the existing literature. Earlier studies have regarded the relationship between psychopathic traits and aggression in children as static. Our study, using a behavioral measure of physical aggression rather than more commonly used pencil-and-paper measures, shows that this relationship is dependent upon the salience of the opponent's distress. We can thus conclude that children with psychopathic traits are indeed prone to act aggressively, but also that this aggression is dynamic and is dependent upon circumstances. In fact, aggression can be attenuated in children with psychopathic tendencies if they are stimulated to focus on their victim's pain and discomfort.

Our findings also have practical implications. The current study showed that when others' distress was emphasized, aggression in children high in psychopathic traits was inhibited. This suggests that helping children with high psychopathic traits to be more alert to the emotional signals of others could be a potential intervention strategy for reducing their aggression.

As we know that to date treatment of psychopathy in adulthood has not had favorable results (Harris & Rice, 2006), it is essential that this type of interventions take place early in the developmental trajectory when interventions are more effective. However, although research is still scarce, several studies have shown children with psychopathic traits to show a reduced response to interventions. One study (Hawes & Dadds, 2005) showed that young boys (age 4–9) with early onset conduct problems and additional psychopathic traits are less responsive to a parenting intervention program than those with early onset conduct problems only. At follow-up, 6 months later, children with the most stable high psychopathic traits showed the poorest outcome (Hawes & Dadds, 2007). Another study (Waschbusch, Carrey, Willoughby, King, & Andrade, 2007) showed that children (age 7–12) with ADHD and conduct problems with additional psychopathic traits were less likely to be normalized by group wise behavioral therapy treatment with additional stimulant medication than were children with ADHD and conduct problems-only. These findings suggest that treatment programs need to be developed, or existing ones need to be modified to specifically fit the needs of children with psychopathic traits. Our findings suggest that interventions that incorporate the induction of awareness of another's emotional state could be effective in this group, at least for reducing aggression.

Parenting techniques that do just that, have been proposed. An example is an empathy induction parenting technique aimed at stimulating prosocial and moral behavior in children (see Hoffman, 2000). It is comparable to our experimental manipulation as it involves the parent focusing the attention of the transgressing child on the feelings of the victim by heightening the salience of the victim's distress and emphasizing the part the transgressor played in causing these feelings. Similarly, parents may be trained to provide their children with opportunities (e.g. pretend play, role play or emotion stories) for vicariously experiencing empathy (Izard, Fine, Mostow, Trentacosta, & Campbell, 2002). Indeed, this is the type of intervention that was recently proposed by Frick & Dickens (2006) as specifically fitting the needs of children with psychopathic traits, as opposed to children with CD of ODD problems who would better be helped with interventions based on parental supervision and discipline or anger-control.

First however, further research is needed on the mechanism of others' distress and aggressive acts in children with psychopathic traits. In our experiment, the proposed mechanism, that children with psychopathic traits commit aggressive acts *because* they show reduced sensitivity to others' distress, was only indirectly examined. Similarly, the exact mechanism through which the increased salience of the opponent's distress brought about the inhibition in aggression seen in the distress condition is not clear. Distress in a victim can be picked up and processed automatically (e.g. through mimicry, the automatic sharing of the emotion), but if the victim expresses his or her distress verbally or in writing, observers can be empathically

aroused through mediated association or role taking (Hoffman, 2000). Although cognitive and affective elements of empathy are often regarded as separate, this may represent a false dichotomy. Cognitive and affective empathic processes influence each other (Duan & Hill, 1996; Hoffman, 2000; Miller & Eisenberg, 1988). The final empathic response to a sign of distress in everyday natural behavior (be it for example comforting, walking away or inhibiting aggression) is therefore a product of both automated affective responding and cognition control. As the opponent's distress cue in our experiment was delivered in writing and did not require an immediate response, automated affective responding in combination with cognitive perspective taking could have played a role in the relation between distress and empathic responding (i.e. the inhibition of aggression). In order to examine the exact mechanism and the relative weights of cognitive versus affective empathy mediating between psychopathic traits and aggression, we would have been required to measure these constructs during the experiment. We chose not to do this because we feared this would negatively influence the believability of our procedure and make our participants suspicious. Future research should investigate the mediating role of cognitive and affective forms of reduced sensitivity to others' feelings in the relation between psychopathic traits and aggressive behaviors.

An unexpected, but interesting, finding in our study was that children with the lowest psychopathic traits showed increased aggression in the distress condition compared to the no distress condition, although this finding failed to reach significance. It should also be noted that this increase did not result in a noise blast volume that exceeded the pain level. Because this finding was not hypothesized and did not reach significance, explanations may be speculative. It is known that another's suffering or distress does not always generate feelings of empathy and prosocial behavior. Research shows that some groups of victims of bullying for example are characterized by submissive behaviors (Griffin & Gross, 2004). It may be that because the children with low psychopathic traits included in our experiment were already attuned to the welfare of the victim without it having to have been made salient, they actually may have considered the explicit expression of fear to be overly submissive, resulting in an aggressive reaction. Similarly, research on display rules has revealed that children, especially in middle childhood, are highly concerned with expressing their 'coolness' and emotional control towards peers (Parker & Gottman, 1989; Underwood, Shockner, & Hurley, 2001), much more so than towards parents (Zeman & Garber, 1996; Zeman & Shipman, 1997). The expressing of emotions, especially feelings of distress and anger, is expected by children to result in negative interpersonal consequences from peers (Zeman & Garber, 1996; Zeman & Shipman, 1997). It may be that, in our experiment, participants with low psychopathic traits 'punished' their opponent for being too explicit in their expression of fear. Children with high psychopathic traits, by contrast, may not have regarded this expression as too explicit because more subtle

distress clues do not reach them. Our results thus show that the effect of heightening the salience of distress cues on aggression is quite subtle and dependent on the level of psychopathic traits and possibly on the conveyer of the message as well. Future studies could look into the relative importance of either of these factors.

Finally, it is advised that our experiment is replicated in a high-risk sample. Research investigating psychopathic traits in youth in community samples has generally produced results quite similar to clinic-referred or high-risk samples (e.g. Andershed et al., 2002; Dadds et al., 2005; Marsee et al., 2005; Van Baardewijk et al., 2008) and psychopathy in youth, like in adults, is now considered to be a continuum rather than a taxon (Murrie, Marcus, Douglas, Lee, Salekin, & Vincent, 2007). Most studies investigating reduced sensitivity in children with psychopathic traits have however focused on clinic-referred samples (Blair, 1997; Blair et al., 2005; Blair et al., 2001; Stevens et al., 2001). It may thus be that children with extreme psychopathy scores, or with conduct problems diagnosis with additional psychopathic traits, react differently to our distress manipulation.

Aggression is a serious problem in today's society, and probably in tomorrow's society as well. As the violent offenders of tomorrow are likely children that act aggressively today, it is important that we find means to reliably identify those children at risk, unravel the mechanisms of their aggression, and find ways to reduce it. Our finding that aggression in children with psychopathic traits is dynamically dependent on circumstances may attenuate the generally pessimistic view of scientists and therapists on the malleability of psychopathy and their behavioral consequences. The finding that aggression in children with high psychopathic traits can, at least temporarily, be inhibited by intensifying the display of the victim's distress may provide a small but essential piece of the puzzle of future intervention strategies aimed at reducing the risk for a deviant and societally harmful development in this important group.

7

General discussion

7. General discussion

Introduction

The studies in this thesis aimed to enhance our understanding of the concept of psychopathic traits in preadolescent children. They did so in two ways. First, through the development of a self-report instrument for measuring psychopathic traits in preadolescent children and second, by providing a deeper understanding of problematic socio-emotional functioning of children with psychopathic traits.

Self-reported psychopathic traits

The aim of the first three studies in this thesis was to develop and validate a new instrument for measuring psychopathic traits in preadolescent children by means of self-report: the Youth Psychopathic traits Inventory-Child Version (YPI-CV) and its abbreviated version, the YPI-Short Child Version (YPI-SCV). The results with respect to the instrument's reliability, stability and construct validity confirmed the hypothesis that psychopathic traits can be measured reliably and validly through self-report in preadolescent children from the community (chapters 2 and 3).

Internal consistency and factor structure – A three factor structure, similar to that of the adolescent YPI and consistent with recent theoretical models (Cooke & Michie, 2001) was shown to fit the data well, in both boys and girls. Good to excellent internal consistencies were found for the YPI-CV total score and the three dimensions (chapter 2).

Stability – Moderate to high stability was found for the total score and all dimension scores of the YPI-CV over 6- and 18 month periods (chapters 2 and 3). These stability indices are comparable to previous findings in both adolescents and children (Barry et al., 2008; Dadds et al., 2005; Forsman, Lichtenstein, Andershed, & Larsson, 2008; Munoz & Frick, 2007). Additionally, children with persistently high levels of psychopathic traits exhibited higher levels of problematic behaviors (conduct problems and proactive aggression) at follow-up (18-month-period) than those with unstable or stable low psychopathic traits (chapter 3). These findings are consistent with the results of recent studies that found high stability of psychopathic traits to predict seriousness of antisocial behavior in adolescents (Pardini & Loeber, 2008) and a worse outcome of a parent-training intervention in clinic-referred preadolescent boys (Hawes & Dadds, 2007).

Construct validity –The construct validity of the YPI-CV was assessed in two ways. First, the three dimensions of the YPI-CV were differentially validated by relating each of them to an external criterion measuring a similar, *a-priori* selected, construct (e.g. narcissism for the grandiose-manipulative dimension). The expected unique relationships between each of the three dimensions and their respective counterparts were

found in both boys and girls (chapter 2). Second, we provided additional evidence for the construct validity of the YPI-CV by showing concurrent and prospective associations between self-reported psychopathic traits and behaviors that have typically been associated with these traits in all age groups: conduct problems and aggression (chapter 3). As expected, self-reported psychopathic traits were related to higher rates of self, peer and teacher reported conduct problems both concurrently and at follow-up, 18 months later, even after controlling for initial levels of conduct problems. Self-reported psychopathic traits were also associated with higher levels of self-reported aggression at follow-up, particularly proactive aggression. These findings are again consistent with previous research in various age groups (e.g. Andershed et al., 2002; Christian, Frick, Hill, & Tyler, 1997; Dadds et al., 2005; Flight & Forth, 2007; Hare, 2003; Lynam, 1997; Porter & Woodworth, 2006; Waschbusch & Willoughby, 2008).

The research described in chapter 4 concerned the development of psychometrically sound and comparable short versions of both the adolescent and child YPI instruments. Step-wise parallel reduction of the items of both questionnaires resulted in two highly similar 18 items YPI short versions (YPI-S and YPI-SCV), which, despite the removal of around two-thirds of the items, were reliable and covered all core characteristics of the psychopathic personality construct. The short versions showed high convergence with the original long instruments and similar correlations to external criterion measures were found for both the long and short versions. Moreover, these findings cross-validated from one sample to another.

To conclude, even though some authors have expressed concerns about the possible lack of reliability of self-report of psychopathic traits in preadolescent age groups (Kamphaus & Frick, 1996) the present research shows that children in this age group can in fact, be considered reliable and valid reporters of psychopathic traits. Self-reported psychopathic traits in this age group form a coherent structure in both boys and girls, are stable over time, and relate to a range of problematic functioning variables both concurrently and prospectively, consistent with theoretical models and previous empirical work.

Implications for clinical practice and future research – A number of the results from chapters 2 through 4 may have relevance for clinical practice and future research. With respect to clinical practice, although the YPI and its child version were developed primarily as research instruments, they may prove to be useful as clinical assessment tools as well (e.g. Poythress, Dembo, Wareham, & Greenbaum, 2006; Wareham, Dembo, Poythress, Childs, & Schmeidler, 2009). In fact, our group has begun to test the utility of the short version of the adolescent YPI (YPI-S; chapter 4) as part of a risk and mental health screening battery in a juvenile justice institute in The Netherlands. With respect to future research, the YPI instruments may be well suited for longitudinal research. Numerous studies in adolescence and children, including those in the current thesis, have shown that psychopathic traits are stable

over time and present similarly across age groups. Despite these indications, one key question has yet to be answered: do children with high psychopathic traits grow up to be adults with high psychopathic traits? The answer to this question lies in the study of psychopathic traits over the lifespan. The YPI instruments could prove to be particularly serviceable tools for this type of research, because short and almost identical questionnaires are now available for children and adolescents. These studies could even reach into adulthood as there is some support for the applicability of the YPI in adults (Kansi, 2003). Moreover, the use of a self-report measure avoids problems related to external rater variance that is likely to complicate research. For example, teachers change mostly yearly. With regards to parents, variance occurs due to their own individual development over time but also the changing relationship to their children.

An interesting recent development, unique to the child and adolescent psychopathy literature, is the synonymous use of the term psychopathy to one of its dimensions: the callous and unemotional traits (CU, Frick & White, 2008). This has led some authors to abandon the other two dimensions in the study of psychopathy in youth (e.g. Burke, Loeber, & Lahey, 2007; Essau, Sasagawa, & Frick, 2006; Frick, Stickle, Dandreaux, Farrell, & Kimonis, 2005; Frick & White, 2008; Waschbusch, Walsh, Andrade, King, & Carrey, 2007). In the current thesis, the relationships between the three YPI-CV factors and criterion variables were reported on in chapters 2, 3 and 6. The investigation of the unique position of the CU dimension within the construct of childhood psychopathy was neither a main research goal, nor a consistent finding. In fact, for a number of reasons, it may be argued not to abandon of the study of *full-facetted* psychopathy in children, and to continue the use of instruments that provide information on all factors. First, several studies in children and youth have shown the cluster with high scores on *all factors* of psychopathy, rather than those high on just one or two factors, to demonstrate the highest levels of societally harmful behaviors. This finding was consistent over age group, sample (e.g. forensic and community) and instrument (Andershed et al., 2002; Andershed, Kohler, Louden, & Hinrichs, 2008; Christian et al., 1997; Dolan & Rennie, 2006; Vincent, Vitacco, Grisso, & Corrado, 2003; Wareham et al., 2009). Moreover, various studies in children and youth have shown evidence for the importance of the total psychopathy score for predicting serious problem behavior (e.g. Lynam, 1997; Piatigorsky & Hinshaw, 2004) chapter 3 and 5 of the current thesis) and emotional and cognitive irregularities (e.g. Blair, 1999; Blair, Budhani, Colledge, & Scott, 2005; Blair & Coles, 2000; Blair, Colledge, Murray, & Mitchell, 2001; Sharp, van Goozen, & Goodyer, 2006). Second, the presence of subtypes within psychopathy has been well established in adults (e.g. primairy versus secondary psychopath; (Karpman, 1948) and is gaining acceptance in adolescence as well (e.g. Wareham et al., 2009). This subtyping is based, in part, on differences in the relative importance of the dimensions (e.g. secondary psy-

chopathy being characterized by higher impulsivity; Ray, Poythress, Weir, & Rickelm, 2009). By abandoning the dimensions other than the CU, we restrict our focus to one particular subtype of children 'high in psychopathic traits' and may risk overlooking the existence of other important subgroups.

Future research – A number of questions regarding the YPI-CV remain unanswered and require further investigation. For example, the added value of self-report to third party reports has yet to be established. While our results show the self-report of psychopathic traits to be reliable and valid in children, previous research has shown that parent/teacher reports measure psychopathic traits reliably and validly as well (e.g. Christian et al., 1997; Dadds et al., 2005; Kimonis, Frick, Fazekas, & Loney, 2006; Lynam, 1997; Piatigorsky & Hinshaw, 2004). Future research could, therefore, compare the relative importance of judgments provided by each type of informant. Moreover, it would be worth investigating whether pooling information from multiple sources (i.e. parents, teachers and children) has greater diagnostic and predictive power than relying on a single source alone (Frick & Hare, 2001). Chapter 3 suggested that another way to potentially increase the predictive utility of psychopathic traits is to make use of repeated assessments rather than a single one. Future studies could investigate the optimal period between two assessments. One could, for instance, imagine that a test-retest-period of one week will not likely add much predictive power, while a one year period may be impractical for assessment purposes.

Psychopathic traits and socio-emotional functioning in children

Chapters 2 through 4 confirmed the viability of self-report, by means of the YPI-Child Version and its abbreviated version, for measuring psychopathic traits in preadolescent children from the community. This allowed for the use of these measures for a more in-depth investigation into how psychopathic traits relate to problematic socio-emotional functioning in this group. This was the aim of the remaining studies (chapters 5 and 6).

Chapter 5 aimed to investigate the relationship between psychopathic traits, measured through the short version of the YPI-CV (YPI-SCV, chapter 4), to social functioning. This is important because various indicators of problematic social adjustment (e.g. low social standing, low social problem solving skills, poor perspective taking skill) are known to predict future psychological maladjustment and antisocial behaviors and aggression (Hoglund et al., 2008; Lochman & Lampron, 1986; Lochman & Wayland, 1994; Lochman et al., 1993; Moffitt, 1993, 1996; Parker & Asher, 1987; Pardini et al., 2006). As children with psychopathic traits are already at risk for an antisocial development, problematic social functioning may further exacerbate psychopathic traits (Barry et al., 2008). The few previous studies investigating this relationship, though ground setting, have studied only a narrow range of social functioning variables. Also, they had a limited focus on the differential relationship

of the different psychopathy factors to social functioning. In our study, children with psychopathic traits proved to be less able and willing to empathize with others, had egocentric and instrumental motivations for acting kind to other children, and strived for dominance, admiration and respect from their peers rather than affiliation. Not surprisingly, they were not well liked by their peers. Thus, children with high psychopathic traits suffered from impaired social functioning on different levels: emotionally, motivationally and interpersonally. Callous-unemotional traits showed the most consistent negative relationship.

Previous research, including chapter 3 of the present thesis, has shown that psychopathic traits are positively related to aggression. However, the conditions under which these aggressive acts are likely to occur in children with psychopathic traits are not well understood. In chapter 6 we proposed that children with high psychopathic traits are aggressive because of their reduced sensitivity to other's distress. Emotional cues, such as fear and sadness, function to make a perpetrator aware of the victim's distress and supposedly inhibit aggression. As children high in psychopathic traits show a reduced sensitivity to others' distress, these important interpersonal signals cannot perform their aggression inhibiting function. In our experimental design, children with high levels of psychopathic traits administered 'blasts' of noise to their opponents that reached well above the level that was previously explicitly described as "hurting the opponents' ears". However, when the distress of the opponent was made salient, their aggression was reduced to levels that did not differ from their counterparts with low psychopathic traits Our experiment thus showed that children with psychopathic traits are indeed prone to act aggressively, but that their aggression can be attenuated by stimulating them to focus on their victim's pain and discomfort.

Implications for clinical practice – Our findings from chapters 5 and 6 may bear clinical relevance, particularly for future treatment programs of conduct problems and psychopathy. At present, little data is available on the treatment of psychopathic traits and their behavioral consequences in children. The available research has, however, shown the presence of psychopathic traits to be relatively resistant to parenting efforts (Edens, Skopp, & Cahill, 2008; Oxford, Cavell, & Hughes, 2003; Wootton, Frick, Shelton, & Silverthorn, 1997) and to negatively influence the effectiveness of a parent-training intervention (Hawes & Dadds, 2005). Children with high psychopathic traits may thus require parenting skills and treatment that go above and beyond what has proven effective for related constructs such as ODD and CD. One type of behavioral problems that is typically associated with psychopathic traits is aggression (Dadds et al., 2005; Frick, Cornell, Barry, Bodin, & Dane, 2003; Frick et al., 1994; Marsee et al., 2005; chapter 3 of the present thesis). In chapter 6 we demonstrated that aggression could be diminished to normal levels if children with high psychopathic traits were

stimulated to focus on their victim's pain and discomfort (i.e. an empathy induction). The results of a recent study by Dadds et al. (2006) are consistent with our findings, and suggest that a better understanding and awareness of a victim's emotional situation may be an important mediating factor in this process. These authors demonstrated that in boys with high psychopathic traits the instruction to focus on emotional cues in others (i.e. pay attention to the eyes region) increased their distress (i.e. fear) recognition abilities in the immediate situation. These, and our, results suggest that it is possible to stimulate emotion recognition capabilities as well as normative emotional and behavioral responses in children with psychopathic traits. One can speculate on how these findings may fuel the intervention programs of tomorrow. For example, parents of children with high psychopathic traits could be stimulated to focus the attention of the transgressing child on the feelings of the victim by heightening the salience of the victim's distress and emphasizing the responsibility of the transgressing child in causing these feelings (an empathy inducting parenting style, Hoffman, 2000). Additionally, emotion (recognition) skills teaching could be part of a personal curriculum in the preadolescent school years for children with high psychopathic traits (Sharp, 2008). It is essential for these types of interventions to take place early in the developmental trajectory when interventions are more effective (Loeber & Farrington, 2000). The development of effective intervention strategies to tackle the emotional problems of children with psychopathic traits may require many more years of additional research. Meanwhile, another potentially effective approach may be taken. In chapter 5, we identified a number of variables relevant to the social functioning of children with psychopathic traits. As recent research has shown that problematic social functioning aggravates psychopathic traits in children (Barry et al., 2008), social emotions, social goals and social status may be important targets for intervention, in order to prevent negative chain reactions that may worsen the prospects of these children even further. These types of interventions, which focus on peer-relations, social emotional functioning, or social cognitions, are already available for children (e.g. Greenberg, Kusche, & Mihalic, 1998; Lochman & Wells, 2002; Grizenko, Zappitelli, Langevin, Hrychko, El-Messidi, Kaminester, Pawliuk, Ter Stepanian, 2000) and can readily be applied to the group of children with high psychopathic traits. Alternatively, 'standard' ODD/CD treatment programs that employ cognitive behavioral strategies aimed at multiple levels (children, parents and, in some cases, schools) may also be used for children with psychopathic traits. It is important to note that the reported negative effect of psychopathic traits on treatment success of an ODD parent training program (Hawes & Dadds, 2005) does not imply that children with high psychopathic traits will not at all benefit from this type of intervention. In fact, Hawes & Dadds (2007) reported a moderate to large positive change (d=.57) in parent-reported psychopathic traits from pre- to 6-month post-treatment for their ODD/CD parent training program.

Future research – The studies in chapter 5 and 6 aimed at a better understanding of developmental mechanisms and processes that may be useful for interventions. However, the direct implications of these findings are still speculative and many issues need to be addressed in future research. For example, more research is needed on the, most likely, complex interaction between psychopathic traits, social relationship problems, and problematic behaviors such as aggression. For example, relational aggression and social status are known to reciprocally influence each other (Puckett, Aikins, & Cillessen, 2007). Low peer status has been shown to result in higher aggression (Cillessen & Mayeux, 2004), but the reverse is also true (Newcomb, Bukowski, Pattee, 1993). Indirect mediational relations between social functioning and problematic behaviors have been shown as well. For example, social responses such as aggression and prosocial acts mediated the relation between social goals (communal and agentic) and peer status (Ojanen, Gronroos, & Salmivalli, 2005). Regarding our findings in chapter 6, one could well imagine high psychopathic traits to be the starting point of a reduced need for affiliation with others and an instrumental attitude toward social relationships, which could then directly, or indirectly through its contribution to aggressive and antisocial behaviors, result in negative peer perception. As low peer status has been shown to intensify the development of psychopathic traits (Barry et al., 2008), a self-perpetuating downward spiral of psychopathic traits, social functioning and behavior might be the result. Future studies should further investigate these complex transactional models to find ways to break this cycle. In chapter 6 it was demonstrated that increasing the salience of the opponent's distress results in lower levels of aggression. However, the exact mechanism through which this happened was not directly examined. Both automated affective responding, cognitive perspective taking or a combination of the two could have played a role in the relation between distress and empathic responding (i.e. the inhibition of aggression). Future research should investigate the mediating role of cognitive and affective forms of empathy (reduced sensitivity to others' feelings) in the relation between psychopathic traits and aggressive behaviors. (Chapter 5 showed children with high psychopathic traits to be impaired in both). Importantly, our experiment showed that aggression could be momentarily reduced after an empathy induction in children with high psychopathic traits. For this finding to have relevance for future treatment programs, it will need to be demonstrated that repeated empathy inductions (i.e. an empathy inducting parenting style) attenuates aggressive behaviors in the long run and outside of the laboratory.

Strengths, limitations and cautionary notes

A strength of the current thesis is that we used different informants and methodologies to investigate psychopathic traits in children. Consistent relations with self-report, teacher report and peer report of criterion measures were found, which attests

to the robustness of our findings. Furthermore, we used not only questionnaires, which are inherently subjective, but also performance measures of both aggression (chapter 5) and empathy (chapters 2 and 6). Finally, we provided cross-sectional as well as longitudinal data on the relationship between psychopathy and aggression.

Despite these strengths, the findings in this thesis need to be valued in the light of a number of limitations. First, the YPI and its child version were constructed specifically to minimize response bias by expressing items in a positive tone (Andershed et al., 2002). However, response bias was not empirically tested in the current thesis, or any previous study. Second, the follow-up period of our longitudinal study was rather modest. It would be worth investigating predictive utility of self-reported psychopathic traits over a longer period and, particularly, across developmental stages (i.e. from childhood to adolescence). Third, we studied psychopathic traits in community samples, and whether our findings generalize to high-risk or clinic-referred samples remains to be demonstrated. It should, however, be noted that studies investigating psychopathic traits in children in community samples have generally produced quite similar results to clinic-referred, or high-risk samples. Specifically, the adolescent equivalent of the YPI-CV has shown to be reliable and valid in community as well as forensic samples (Andershed et al., 2007; Andershed et al., 2002; Larsson et al., 2007; Poythress et al., 2006; Skeem & Cauffman, 2003; Wareham et al., 2009). Nonetheless, the validity of the YPI-CV will need to be formally substantiated in other samples. Finally, the YPI-CV instrument was developed as a research instrument and the current thesis only supports its reliability and validity at the group-level. Research has shown that instruments making accurate predictions of, for example, future violent behaviors on group-level can be quite inaccurate on the individual level (Hart, Michie, & Cooke, 2007). As such, one should be very cautious when using the YPI instruments to draw inferences about future behavior of individual children.

The study of psychopathic traits in children is not without debate (e.g. Edens, Skeem, Cruise & Cauffman, 2001; Seagrave & Grisso, 2002). Legitimate concerns have been raised regarding the potential harm of the use of the psychopathy-label, which has a particularly negative connotation, to children and adolescents. Therefore, one has to be very careful to avoid labeling children as 'psychopathic' or 'psychopath'. Instead, we have been careful to use 'psychopathic traits' throughout this thesis. Another concern bears on the danger of mistaking transient, developmentally normative, behaviors as psychopathic. Seagrave and Grisso (2002) expressed concerns about the danger of high numbers of false positives when using current psychopathy measures in youth. They argued that a number of behaviors, such as impulsivity, risk-taking and self-centeredness, which are normative and transient phenomena in normal adolescent development, could wrongfully be interpreted as reflecting psychopathic tendencies. By contrast, others (Frick, 2002; Frick & Marsee, 2006) have argued that the assessment of psychopathic traits in children and adolescents is

wrongfully regarded as uniquely problematic compared to other psychopathological constructs. Normative developmental stage issues play a role in most, if not all, child psychopathologies and normative variants of the 'symptoms' of a disorder are also commonly found (Cicchetti & Richters, 1997). To conclude, although it is important for researchers, mental health professionals and those involved in the juvenile justice system to be sensitive to the potential dangers of the label 'psychopathy' in youth and children, current insights, including those presented in this thesis, underscore the need to continue research in this important and fascinating field of study.

Summary

Summary

The absolute majority of children behaves bad at times. However, some children show extreme and hence worrisome levels of 'badness'. They lie, they bully, they fight or steal. These children are known to be at risk for developing a persistent pattern of antisocial behavior, delinquency and aggression. There are many risk-factors associated with these types of conduct problems. These include, personal, peer, familial and neighborhood factors. In particular, the study of children's *personality traits* may help further our understanding of the different mechanisms that lead to serious problem behavior in youth. In adulthood and adolescence, a constellation of personality traits named 'psychopathy', has proven useful in identifying a particularly recalcitrant form of antisocial and criminal behavior (Cleckley, 1941; Das, de Ruiter, Lodewijks, & Doreleijers, 2007; Forth et al., 2003; Hare, 2003). While research on psychopathy to date has foremost focused on these age groups, there are a number of historical and developmental reasons to assume that psychopathic traits may already be observable in preadolescent children, and recent empirical findings have confirmed this.

This thesis aimed to enhance our understanding of the concept of psychopathic traits in preadolescent children. It did so in two ways. First, by developing a self-report instrument for measuring psychopathic traits in preadolescent children; and second, by providing a deeper understanding of socio-emotional functioning of children with psychopathic traits.

Self-reported psychopathic traits

Studying psychopathic traits through self-report is important because children are in the unique position to report on feelings, attitudes and behaviors across a range of situations, including the home, the classroom and the playground. Self-report may thus provide an important additional perspective on preadolescent children's psychopathic traits to commonly used parent and teacher reports. However, no self-report instrument of psychopathic traits existed. The aim of the first three studies in this thesis was, therefore, to develop and validate a new instrument for measuring psychopathic traits in preadolescent children by means of self-report: the Youth Psychopathic traits Inventory-Child Version (YPI-CV) and its abbreviated version, the YPI-Short Child Version (YPI-SCV). Chapters 2 and 3 described the development and validation of the YPI-CV. This instrument is a downward extension of the adolescent Youth Psychopathic traits Inventory (Andershed et al., 2002). The results with respect to the instrument's reliability, stability and construct validity, suggest that psychopathic traits can be measured reliably and validly through self-report in preadolescent children from the community.

Internal consistency and factor structure- A three factor structure, similar to that of the adolescent YPI and consistent with recent theoretical models (Cooke & Michie, 2001) was shown to fit the data well, in both boys and girls. Good to excellent internal consistencies were found for the YPI-CV total score and the three dimensions (chapter 2).

Stability – Moderate to high stability was found for the total score and all dimension scores of the YPI CV over 6- and 18 month-periods (chapters 2 and 3). Additionally, children with persistently high levels of psychopathic traits exhibited higher levels of problematic behaviors (conduct problems and proactive aggression) at follow-up (18-month-period) than those with unstable or stable low psychopathic traits (chapter 3).

Construct validity – The construct validity of the YPI-CV was assessed in two ways. First, the three dimensions of the YPI-CV were differentially validated by relating each of them to an external criterion measuring a similar, *a-priori* selected, construct (e.g. narcissism for the grandiose-manipulative dimension). The expected unique relationships between each of the three dimensions and their respective counterparts, were found in both boys and girls (chapter 2). Second, we provided additional evidence for the construct validity of the YPI-CV by investigating the concurrent and prospective associations between self-reported psychopathic traits and behaviors that have typically been associated with these traits in all age groups: conduct problems and aggression (chapter 3). As expected, self-reported psychopathic traits were related to higher rates of self, peer and teacher reported conduct problems both concurrently and at follow-up, 18 months later, even after controlling for initial levels on conduct problems. Self-reported psychopathic traits were also associated with higher levels of self-reported aggression at follow-up, particularly proactive aggression.

The research described in chapter 4 concerns the development of psychometrically sound and comparable short versions of both the adolescent and child YPI instruments. Step-wise parallel reduction of the items of both questionnaires resulted in two highly similar 18 items YPI short versions (YPI-S and YPI-SCV), which, despite the removal of around two-thirds of the items, were reliable and covered all core characteristics of the psychopathic personality construct. The short versions showed high convergence with the original long instruments, and similar correlations to external criterion measures were found for both the long and short versions. Furthermore, these findings cross-validated from one sample to another.

To conclude, the present research shows that children in this age group can be considered reliable and valid reporters of psychopathic traits.

The findings in these first three studies (chapter 2 to 4) have a number of implications (described in chapter 7). With respect to clinical practice, although the YPI and its child version were developed primarily as research instruments, they may prove to be useful as clinical assessment tools as well. In fact, our group has begun to test

the utility of the short version of the adolescent YPI (YPI-S; chapter 4) as part of a risk and mental health screening battery in a juvenile justice institute in The Netherlands. Second, with respect to their utility for research on psychopathic traits, the YPI instruments may be well suited for the longitudinal study of psychopathic traits over the lifespan. This type of study may answer the important question whether children with high psychopathic traits grow up to be adults with high psychopathic traits. The YPI instruments could prove to be particularly serviceable for this type of research because almost identical questionnaires are now available for children and adolescents, which may also work in adults (Kansi, 2003). First, however, further research is needed on the YPI–CV. For example, future research could compare the relative importance of judgments provided by each type of informant (parents vs. teachers vs. self report). Moreover, it may be worth investigating whether pooling information from multiple sources (i.e. parents, teachers and children) has greater diagnostic and predictive power than relying on a single source alone (Frick & Hare, 2001).

Psychopathic traits and socio-emotional functioning in children

The aim of the remaining studies (chapters 5 and 6) was to conduct a more in-depth investigation into how psychopathic traits relate to problematic socio-emotional functioning in this group..

Chapter 5 aimed to investigate the relationship between psychopathic traits, measured through the short version of the YPI-CV (YPI-SCV, chapter 4), to social functioning. Gaining insight into this relationship is important because various indicators of problematic social adjustment (e.g. low social standing, low social problem solving skills, poor perspective taking skill) were shown to be predictive of future psychological maladjustment and antisocial behavior. This is particularly important for children with psychopathic traits, as they are already at risk for an antisocial development. Recent evidence even shows that problematic social functioning may exacerbate psychopathic traits (Barry et al., 2008). In our study, children with psychopathic traits were less able and willing to empathize with others, had egocentric and instrumental motivations for acting kind to other children, and strived for dominance, admiration and respect from their peers rather than affiliation. Not surprisingly, they were not well liked by their peers. Thus children with high psychopathic traits suffered from impaired social functioning at different levels: emotionally (cognitive and emotional empathy), motivationally (social goals), and interpersonally (social status).

Previous research, including chapter 3 of the present thesis, had shown that psychopathic traits are positively related to aggression. However, the conditions under which these aggressive acts are likely to occur in children with psychopathic traits are not well understood. In chapter 6 we proposed that children with high psychopathic traits are aggressive because of their reduced sensitivity to other's distress. In our experimental design, children with high levels of psychopathic traits administered

'blasts' of noise to their opponents that reached well above the level that was previously explicitly described as "hurting the opponents' ears". However, when the distress of the opponent was made salient, their aggression was reduced to levels that did not differ from their counterparts with low psychopathic traits. Our experiment thus showed that children with psychopathic traits are indeed prone to act aggressively, but that their aggression can be attenuated by stimulating them to focus on their victim's pain and discomfort.

The findings in these last two studies (chapters 5 and 6) have a number of implications (detailed in chapter 7). In chapter 6 we demonstrated that aggression could be attenuated to normal levels if children with high psychopathic traits were stimulated to focus on their victim's pain and discomfort (i.e. an empathy induction). One can speculate on how this finding may fuel intervention programs of tomorrow. For example, parents of children with high psychopathic traits could be stimulated to focus the attention of the transgressing child on the feelings of the victim by heightening the salience of the victim's distress and emphasizing the responsibility of the transgressing child in causing these feelings (an empathy inducting parenting style, Hoffman, 2000). Additionally, emotion (recognition) skills teaching could be part of a personal curriculum in the preadolescent school years for children with high psychopathic traits (Sharp, 2008). The development of effective intervention strategies to tackle the emotional problems of children with psychopathic traits may require many more years of additional research. Meanwhile, another potentially effective approach may be taken. In chapter 5, we identified a number of variables relevant to the social functioning of children with psychopathic traits. As recent research has shown that problematic social functioning aggravates psychopathic traits in children (Barry et al., 2008), social emotions, social goals and social status may be important targets for intervention, in order to prevent negative chain reactions that could worsen the prospects of these children even further. We could therefore begin to target problematic social functioning rather than the psychopathic traits per se, given the availability of interventions that focus on peer-relations, social emotional functioning, or social cognitions.

The studies in chapter 5 and 6 aimed at a better understanding of developmental mechanisms and processes that may be useful for interventions. However, the direct implications of these findings are still speculative and many issues need to be addressed in future research. For example, more research is needed on the, most likely, complex interplay between psychopathic traits, social relationship problems, and problematic behaviors such as aggression. Reciprocal influences are likely, possibly resulting in a self-perpetuating downward spiral of psychopathic traits, social functioning and behavior. Future studies should further investigate these complex transactional models to find ways to break this cycle. In chapter 6 it was demonstrat-

ed that increasing the salience of the opponent's distress results in lower levels of aggressive responding. However, the exact mechanism through which this happened was not directly examined. Both cognitive (perspective taking) or affective empathy mechanisms could have played a role. Furthermore, in order to have relevance for future treatment programs, it will need to be demonstrated that repeated empathy inductions (i.e. a empathy inducting parenting style), attenuates aggressive behaviors in the long run and outside of the laboratory.

Finally, the study of psychopathic traits in children is not without debate. Legitimate concerns have been raised regarding the potential harm of the use of the psychopathy-label, which has a particularly negative connotation, to children and adolescents. Therefore, one has to be very careful to avoid labeling children as 'psychopathic' or 'psychopath', which we have tried throughout this thesis. However, current insights including those presented in this thesis, underscore the need to continue research in this important and fascinating field of study.

Nederlandse samenvatting

Nederlandse samenvatting

Alle kinderen doen wel eens dingen die niet mogen of waarmee ze anderen benadelen. Maar, sommige kinderen doen dat vaker dan andere. Het is bekend dat sommige van deze kinderen risico lopen ook in de adolescentie en volwassenheid dergelijk antisociaal gedrag te vertonen. Er zijn veel verschillende factoren die aan dergelijke probleemgedrag ten grondslag kunnen liggen, waaronder persoonlijkheidskenmerken. Bij volwassenen en adolescenten is bekend dat een cluster van persoonskenmerken dat men 'psychopathie' noemt verantwoordelijk is voor een zeer hardnekkige en ernstige vorm van criminaliteit en antisociaal gedrag (Cleckley, 1941; Das et al., 2007; Forth et al., 2003; Hare, 2003). Op basis van historische beschrijvingen van probleemgedrag en inzichten uit de ontwikkelingspsychologie, is er reden om aan te nemen dat deze kenmerken ook al op jonge leeftijd meetbaar zijn, en sinds enige jaren wordt dit in empirisch onderzoek ook bevestigd.

Het huidige onderzoek had tot doel onze kennis over psychopathische trekken bij kinderen te vergroten. Allereerst werd nagegaan of deze trekken bij kinderen betrouwbaar en valide kunnen worden gemeten met behulp van zelfrapportage. Daartoe werd een nieuw instrument ontwikkeld: de Youth Psychopathic traits Inventory – Child Version. Vervolgens werd onderzocht hoe psychopathische trekken, gemeten middels dit instrument, gerelateerd zijn aan problematisch sociaal-emotioneel functioneren.

Zelfrapportage van psychopathische trekken

Het gebruik van zelfrapportage in onderzoek naar psychopathie is belangrijk omdat kinderen in een unieke positie verkeren: zij kunnen rapporteren over hun gevoelens en gedrag in veel verschillende situaties, zoals op school, thuis of 'buiten'. Het gebruik van zelfrapportage kan dus een belangrijke toegevoegde waarde hebben naast het gebruik van ouder- en docentenrapportage. Tot op heden waren er geen zelfrapportage instrumenten voor het meten van psychopathische trekken bij kinderen beschikbaar. Het doel van de eerste drie studies uit dit proefschrift was dan ook het ontwikkelen van een betrouwbaar en valide zelfrapportage instrument voor preadolescente kinderen (9–12 jaar) uit de normale populatie: de Youth Psychopathic traits Inventory – Child Version (YPI-CV) en de verkorte versie, de YPI-Short-Child Version (YPI-SCV). De YPI-CV is een, aan de begrips- en belevingswereld van kinderen aangepaste, versie van de Youth Psychopathic traits Inventory (Andershed et al., 2002), een vragenlijst voor adolescenten. De lijst omvat, net als de oorspronkelijke versie, 50 items verdeeld over 10 schalen. In de hoofdstukken 2 en 3 werden de psychometrische kwaliteiten van de YPI-CV beschreven.

Interne consistentie en factorstructuur – Confirmatieve factoranalyse leverde zowel bij jongens als bij meisjes steun voor een drie-factor-model, vergelijkbaar met

het model dat bij adolescenten is gevonden, bestaande uit een affectieve (callous-unemotional), een interpersoonlijke (grandiose-manipulative) en een gedragsfactor (impulsive-irresponsible). De betrouwbaarheid van de totaalscore en deze drie subschalen waren goed (zie hoofdstuk 2).

Stabiliteit – Psychopathische trekken gemeten middels zelfrapportage bleken matig tot hoog stabiel. Dit komt overeen met de resultaten van onderzoek waarin gebruik is gemaakt van docent- of ouderrapportage. Ook bleek dat kinderen met persistent hoge psychopathische trekken over een periode van 18 maanden meer gedragsproblemen en proactieve agressie lieten zien bij de laatste meting dan kinderen van wie de psychopathische trekken instabiel waren, of stabiel laag.

Construct validiteit – De construct validiteit van de YPI-CV werd op twee manieren onderzocht. Allereerst werd de differentiële validiteit van de drie factoren onderzocht door hen te relateren aan *a priori* gekozen constructen, waarbij unieke relaties tussen elk van de drie de factoren en vergelijkbare constructen werden gevonden. Zo was de affectieve factor uniek gerelateerd aan empathie en de gedragsfactor aan impulsiviteitsproblemen (zie hoofdstuk 2). Voor jongens en meisjes werden wederom vergelijkbare resultaten gevonden. Vervolgens werd gekeken naar de relatie tussen psychopathische trekken enerzijds en gedragsproblemen en agressie anderzijds. Zoals verwacht lieten kinderen met hogere scores op de psychopathie-vragenlijst meer gedragsproblemen en agressie zien, zowel initieel als bij follow-up (18 maanden later). Deze laatste bevinding bleef ook overeind na controle voor het effect van gedragsproblemen tijdens de baseline meting, en was consistent over beoordelaars (gedragsproblemen gerapporteerd door kinderen zelf, hun docenten en hun klasgenoten). Psychopathische trekken bleken verder samen te hangen met meer reactieve (emotionele), maar vooral meer proactieve (instrumentele) agressie bij follow-up.

Het doel van het onderzoek beschreven in hoofdstuk 4 was het ontwikkelen van twee parallelle verkorte versies van de (adolescent- en kind-) YPI-instrumenten, aangezien beide instrumenten wat aan de lange kant werden geacht. Stapsgewijze reductie van het aantal items leidde tot twee vrijwel identieke 18-item vragenlijsten: the YPI-Short Version (YPI-S; de adolescenten versie) en de YPI-Short Child Version (YPI-SCV; de kind versie). De verkorte vragenlijsten bleken betrouwbaar en maten alle kenmerken van psychopathie. Ze vertoonden een hoge mate van samenhang met de oorspronkelijke lange vragenlijsten en de relatie tot externe constructen van de korte en lange vragenlijsten was nagenoeg gelijk. Tenslotte bleek dat al deze bevindingen in een onafhankelijke sample gerepliceerd konden worden.

Concluderend kan gesteld worden dat psychopathische trekken betrouwbaar en valide te meten zijn met behulp van zelfrapportage bij kinderen van 9–12 jaar uit de normale populatie. Deze resultaten hebben een aantal mogelijke implicaties voor de klinische praktijk en onderzoek, welke uitgebreid beschreven worden in de discussie in hoofdstuk 7. Hoewel de YPI instrumenten oorspronkelijk zijn ontwikkeld als

onderzoeksinstrumenten, zijn ze mogelijk in de toekomst eveneens geschikt als diagnostisch instrumenten. Momenteel wordt bijvoorbeeld de klinische bruikbaarheid van de YPI-S (hoofdstuk 4) binnen een justitiële jeugdinrichting in Nederland onderzocht. Aangezien er nu vrijwel identieke versies van de YPI zijn voor het gebruik bij kinderen, adolescenten en zelfs volwassen (Kansi, 2003) lijken de YPI instrumenten ook uitermate geschikt voor longitudinale studies naar de ontwikkeling van psychopathische trekken.

Psychopathische trekken en sociaal emotioneel functioneren

Het onderzoek in hoofdstuk 5 had tot doel de relatie tussen psychopathische trekken, gemeten met de verkorte versie van de YPI-CV (YPI-SCV, hoofdstuk 4) en sociaal functioneren te onderzoeken. Dit is belangrijk omdat bekend is dat problematisch sociaal functioneren (zoals een lage sociale status, een beperkt sociaal probleemoplossend vermogen of een laag inlevingsvermogen) het risico op antisociaal gedrag vergroten. Kinderen met psychopathische trekken hebben een verhoogd risico op een antisociale ontwikkeling, en er zijn bovendien aanwijzingen dat sociale problematiek hun problemen kan verergeren (Barry et al., 2008). Het is dus van groot belang meer zicht te krijgen op het sociaal functioneren van deze kinderen. Zoals verwacht bleek dat kinderen psychopathische trekken zich minder goed konden inleven in anderen (cognitieve empathie), minder sympathie en medelijden hadden met een ander (affectieve empathie), prosociaal gedrag vertoonden met een hogere egocentrische motivatie en in hun contact met andere kinderen sterker streefden naar dominantie, respect en bewondering. Tenslotte bleek dat ze minder populair waren onder hun klasgenoten. Deze kinderen vertoonden dus in hun sociaal functioneren emotionele (affectieve en cognitieve empathie), motivationele (sociale doelen) en interpersoonlijke (sociale status) problemen.

Eerder onderzoek, waaronder dat in hoofdstuk 3, had aangetoond dat agressief gedrag kenmerkend is voor kinderen met psychopathische trekken. Deze relatie zou verklaard kunnen worden door het feit dat deze kinderen relatief ongevoelig zijn voor tekenen van leed in anderen ('distress'; zoals angstige of verdrietige gezichtsuitdrukkingen). In hoofdstuk 6 toonden we aan dat agressie bij kinderen met psychopathische trekken verminderd kon worden door het kind te attenderen op de *distress* van de tegenstander. In onze experimentele opzet bestookten kinderen met hoge psychopathische trekken hun (gesimuleerde) tegenstanders met geluiden ('noiseblasts') zelfs tot boven een, vooraf uitgelegd, pijnniveau. Echter, wanneer de intensiteit van de distress van de tegenstander werd verhoogd, daalde de agressie van kinderen die hoog scoorden op psychopathie en verschilden ze niet van hun laag scorende leeftijdsgenoten. Uit ons experiment bleek dus dat kinderen met psychopathische trekken inderdaad geneigd zijn tot agressie, maar dat deze agressie verminderd kan worden door hun aandacht te richten op andermans leed.

Ook de bevindingen uit hoofdstukken 5 en 6 hebben implicaties, welke bediscussieerd worden in hoofdstuk 7. In hoofdstuk 6 toonden we aan dat agressie bij kinderen met hoge psychopathische trekken verminderd kon worden tot een normaal niveau door hun aandacht te richten op andermans leed (een 'empathie inductie'). Men kan speculeren over hoe deze bevinding toekomstige behandelingsmethoden voor kinderen met psychopathische trekken kan voeden. Ouders van kinderen met psychopathische trekken zouden bijvoorbeeld getraind kunnen worden de aandacht van hun kinderen te richten op het leed van de ander, en de rol die het kind daarin speelde (een 'empathie inducerende opvoedingsstijl', Hoffman, 2000). Ook zou men kunnen denken aan schoolprogramma's voor risicokinderen, gericht op emotie (herkennings) vaardigheden (Sharp, 2008). Echter, de stap van ons onderzoek naar dergelijke behandelprogramma's is groot en vereist vele tijdrovende tussenstappen. Hoofdstuk 5 biedt handvatten voor interventies die mogelijk nu al ingezet kunnen worden. In dit hoofdstuk toonden we aan dat kinderen met psychopathische trekken op meerdere sociale gebieden problematisch functioneren. Men zou daarom in behandeling kunnen insteken op dit sociale functioneren, in plaats van op de psychopathische trekken zelf, aangezien voor het leren van sociale vaardigheden al ruimschoots behandelingsprogramma's beschikbaar zijn.

Zoals vermeld roepen de bevindingen uit hoofdstuk 5 en 6 ook nieuwe vragen op waarop toekomstig onderzoek mogelijk een antwoord kan geven. Wat betreft de bevindingen uit hoofdstuk 5 bijvoorbeeld, is nader onderzoek nodig naar het vermoedelijk zeer complexe samenspel van psychopathische trekken, sociale relatieproblemen en gedragsproblemen zoals agressie. Met betrekking tot de bevindingen uit hoofdstuk 6, is het nog onduidelijk welk mechanisme ervoor gezorgd heeft dat onze empathie-inductie zorgde voor een verlaging van agressie.

Tenslotte, het onderwerp psychopathie bij kinderen is controversieel. Terecht wijzen sommigen op de schade die het, vermoedelijk moeilijk uitwisbare, stempel 'psychopaat' kinderen en adolescenten kan berokkenen. Aan dit label kleeft, althans bij volwassenen, 'gevaarlijk' en 'onbehandelbaar'. Omdat het niettemin van belang is dat onderzoek op dit vlak ook bij jonge kinderen verricht wordt, is er in dit proefschrift voor gekozen consistent de term psychopathe trekken te gebruiken. Onderzoek tot op heden heeft duidelijk gemaakt dat psychopathie, ook bij kinderen, een reëel concept is dat bijdraagt aan de puzzel die antisociaal gedrag is. Mogelijk biedt juist ook onderzoek, waaronder dat in het huidige proefschrift, aanknopingspunten om de connotatie 'onbehandelbaar' tot het verleden te laten behoren.

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Curriculum Vitae

Curriculum Vitae

Yoast van Baardewijk was born on february 16th, 1974 in Schiedam, The Netherlands. He attended high school in Vlaardingen at the Groen van Prinsterer lyceum from 1986 until 1994. Nine years later, he received his Master's degree in developmental psychology at the VU University in Amsterdam. During his studies he worked as a special educations teacher and a pedagogical group worker with adolescents with intellectual and psychiatric needs. Since his graduation he has worked as a researcher for the department of developmental psychology of the VU University, Amsterdam as well as PI Research, Duivendrecht and Curium-LUMC in Oegstgeest. He is also affiliated with the department of child and adolescent psychiatry of the VU University Medical Centre, in Amsterdam (CAPVUmcA). Early 2011 he hopes to have finished a two year clinical internship (*GZ-opleiding*) at Curium-LUMC and juvenile justice institute Teylingereind in Sassenheim. He lives with his wife, their 5-year old daughter and their 32-year old Mercedes-Benz in Amsterdam.

Yoast van Baardewijk werd geboren op 16 februari 1974 te Schiedam. Hij doorliep het VWO op het Groen van Prinsterer lyceum in Vlaardingen van 1986 tot 1994. Negen jaar later studeerde hij af aan de afdeling kinder- en jeugdpsychologie van de faculteit der psychologie en pedagogiek van de Vrije Universiteit te Amsterdam. Tijdens zijn studie werkte hij als onderwijzer en hulpverlener in het speciaal onderwijs (VSO-ZMOK) en als sociotherapeut in een residentiële voorziening voor lichtverstandelijk gehandicapte jongeren. Na zijn afstuderen deed hij onderzoek voor de afdeling kinder- en jeugdpsychologie van de faculteit der psychologie en pedagogiek van de Vrije Universiteit, PI Research te Duivendrecht en Curium-LUMC te Oegstgeest. Daarnaast heeft hij banden met de afdeling kinder- en jeugdpsychiatrie van het VUmc (CAPVUmcA). Momenteel volgt hij de opleiding tot gezondheidzorgspsycholoog en werkt als kinder- en jeugdpsycholoog voor Curium-LUMC in Oegstgeest en forensische centrum Teylingereind te Sassenheim. Hij woont, samen met zijn vrouw, hun 5-jarige dochter en hun 32-jaar oude Mercedes-Benz in Amsterdam.

List of publications

List of publications

International

Van Baardewijk, Y., Stegge, H., Andershed, H., Thomaes, S., Scholte, E. & Vermeiren, R. (2008) Measuring psychopathic traits in children through self-report. The development of the Youth Psychopathic traits Inventory – Child Version. *The International Journal of Psychiatry and Law, 31:* 3, 199–209

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Van Baardewijk, Y., Vermeiren, R. Stegge, H., & Doreleijers, Th. (accepted pending minor revisions) Self-reported psychopathic traits in children: their stability and concurrent and prospective associations with conduct problems and aggression. *Journal of Psychopathology and Behavioral Assessment*

Van Baardewijk, Y., Stegge, H., Barry, C., Doreleijers, Th., & Vermeiren, R. (submitted) Psychopathic traits and social functioning in children.

Sharp, C., Van Baardewijk, Y. & Stegge, H. (submitted) Callous/unemotional traits and theory of mind: preliminary evidence for a developmental discontinuity from childhood to adolescence.

Translations

Bijttebier, P. & Van Baardewijk, Y. (2009). Child Problematic Traits Inventory (CPTI): Authorized Dutch translation. Unpublished research version.

Appendix

Appendix

Items of the YPI-CV

Please do not use or distribute these items. The full Dutch and English YPI-CV, YPI-SCV and YPI-S questionnaires are available from the author upon request. (y.van_baardewijk@curium.nl or yoast_vb@dds.nl)

	Does not apply at all	Does not apply well	Applies fairly well	Applies very well
1. I like to get into situations that give me a thrill.	☐	☐	☐	☐
2. I usually feel calm when other people are scared.	☐	☐	☐	☐
3. I prefer to spend my money right away rather than save it.	☐	☐	☐	☐
4. I get bored quickly when everything stays the same.	☐	☐	☐	☐
5. I find rules to be nothing but a nuisance.	☐	☐	☐	☐
6. It's easy for me to be extra nice and sweet to others to get what I want from them.	☐	☐	☐	☐
7. It's fun to make up stories and try to get people to believe them.	☐	☐	☐	☐
8. I am able not to feel bad about things that I think other people would feel bad about.	☐	☐	☐	☐
9. I think of myself as someone who does things suddenly, without thinking.	☐	☐	☐	☐
10. I'm better than everyone at almost everything.	☐	☐	☐	☐
11. I can make people believe almost anything	☐	☐	☐	☐
12. I think that crying is weak, even if no one sees you.	☐	☐	☐	☐
13. If I could, I would quit school and only do things that are fun.	☐	☐	☐	☐
14. I can fool others by acting extra nice and sweet.	☐	☐	☐	☐
15. I am good at getting people to believe in what make up.	☐	☐	☐	☐
16. I don't think it is necessary to tell my parents what I'm going to do when I go outside.	☐	☐	☐	☐
17. When other people have problems, it is usually their own fault and that's why you should not help them.	☐	☐	☐	☐
18. It often happens that I talk first and think later.	☐	☐	☐	☐
19. I am much more talented than other people.	☐	☐	☐	☐
20. It's easy for me to make other people do things that suit me well.	☐	☐	☐	☐
21. I almost never regret things I do, even if other people feel that they are wrong.	☐	☐	☐	☐
22. I like to do things just because they feel cool or exciting	☐	☐	☐	☐
23. When I have hurt other people's feelings, it doesn't really bother me.	☐	☐	☐	☐
24. Sometimes I lie for no reason, other than because it's fun.	☐	☐	☐	☐
25. It's weak to feel nervous or worried.	☐	☐	☐	☐

	Does not apply at all	Does not apply well	Applies fairly well	Applies very well
26. If I get the chance to do something fun, I do it no matter what I was doing before.	☐	☐	☐	☐
27. When someone asks me something, I usually have a quick answer that sounds as if it's true even if I have just made it up.	☐	☐	☐	☐
28. When someone finds out that I did something wrong, I feel more angry than guilty.	☐	☐	☐	☐
29. I get bored quickly by doing the same thing over and over.	☐	☐	☐	☐
30. The world would be a better place if I were the boss.	☐	☐	☐	☐
31. Fooling others is the best way to get what I want from them.	☐	☐	☐	☐
32. It often happens that I do things without thinking ahead.	☐	☐	☐	☐
33. Often I act extra nice and sweet to get what I want, even with people I don't like.	☐	☐	☐	☐
34. It has happened several times that I have borrowed something and then lost it.	☐	☐	☐	☐
35. If I watch sad things on tv or in a movie it usually doesn't get to me.	☐	☐	☐	☐
36. What scares others usually doesn't scare me.	☐	☐	☐	☐
37. I'm more important and more valuable than other people.	☐	☐	☐	☐
38. When I need to I will act extra nice and sweet so others will do exactly what I want.	☐	☐	☐	☐
39. I don't understand how people can cry from watching TV or a movie.	☐	☐	☐	☐
40. I think that doing homework is useless.	☐	☐	☐	☐
41. I will become a well-known and important person, I know that already.	☐	☐	☐	☐
42. I like to do exciting and dangerous things, even if they are forbidden.	☐	☐	☐	☐
43. Sometimes I find myself lying for no special reason.	☐	☐	☐	☐
44. It's weak to feel guilty when you have hurt others.	☐	☐	☐	☐
45. Feelings are less important to me than they are for others.	☐	☐	☐	☐
46. It has happened that I have used someone in order to get what I want.	☐	☐	☐	☐
47. I like to exaggerate when I tell about something.	☐	☐	☐	☐
48. Feeling bad when you have done something wrong is a waste of time.	☐	☐	☐	☐
49. When others are sad, I don't really care.	☐	☐	☐	☐
50. I have often gotten into trouble because I lied too much.	☐	☐	☐	☐